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CONTENTS.

PAGE

Original Department.

Experimental Researches on Chronic Alcoholic Poisoning. By Drs. Beaumetz and Audigé..... 289
"Sarco-Peptones." By C. W. Tangeman, M. D..... 296
Ureometry. By A. B. Lyons, M. D.. 300
Who is a Therapeutist? By Frank A. Ramsey, M. D 304
How Can Physicians Aid in Elevating the Profession of Pharmacy. By Robert Meade Smith, M. D..... 306
The Neutral Treatment in Fevers. By Dr. L. L. Holcombe..... 307
Summer Complaint. By John T. Booth, M. D..... 308
Meteorology of Colorado. By A. Comstock, M. D.... 309
More About Burdock Seeds. By W. H. Bentley, M. D 310
Compound Syrup of the Hypophosphites of Manganese. By C. G. Polk, M. D..... 310
Black Haw in Vomiting of Pregnancy. By W. B. Ketner, M. D.. 311
Case of Dyspepsia and Chronic Chills Treated with Tincture of Eucalyptus Globulus. By C. Barlow, M. D..... 311

Translations.

Syrup of the Hypophosphites (Fellows')..... 312

PAGE

The Root of the Cotton Plant as a Substitute for Ergot..... 313
The Antipyretic Action of Kairine.. 313
Osmic Acid in Peripheral Neuralgia. 314
The Action of Muriate of Cocain on the Human System..... 314
Amorphous Borate of Quinine..... 315
The Treatment of Ozœna..... 315
Chromic Acid in Diseases of the Mouth..... 315
Treatment of Diphtheria with Papayotin..... 315

Correspondence.

Philadelphia Letter..... 315
Carbolic Injection of Piles..... 317
Glacial Phosphoric Acid Test for Albumen in Urine.—Carbolic Acid for Piles..... 317
Papular Eczema 317
Mullein Leaves Smoke in Phthisis... 318
Dewberry (Rubus Procumbens) in Dysentery..... 318
Eczema Papulosum..... 318
Summer Complaint (Cholera Infantum) in Children... 318
Laxative Powder (P. G.)..... 319
Remedies for Erysipelas..... 319
Meat Poisoning 319

Editorial.

Summer Complaint in Children..... 319
Cremation in its Legal Aspects 323
Dewberry Root 323
Death of Dr. Frank A. Ramsey ... 324
Menthol Pencils 324
Membership in the American Medical Association..... 325

PAGE

Oleomargarine in New York..... 325

Editorial Abstracts and Annotations.

The Action and Use of Diuretics ... 325
The Oleate of Zinc 327
Glycerine in Fevers..... 227
Rectal Etherization..... 327
Chancres and Old Sores 328
Bichloride of Mercury in Fœtid Bronchitis 328
Iodoform in Erysipelas..... 328

Book Reviews and Notices. 274

Therapeutic Progress.

On the Physiological Action of Piscidia Erythrina..... 331
The Constipation Habit..... 332
Recent Progress in Therapeutics and Materia Medica..... 333
Manaca (Franciscea Uniflora..... 334
Kola Nut..... 335
Menthol..... 335
Use of Pilocarpine in Pleurisy and Peritonitis..... 335
A Caution About Jequirity..... 336
Elenine as a Remedy for Coughs... 336
Preparation of Infusion of Jequirity. 336
On the Use of Iridin in the Treatment of the Sickness of Early Pregnancy..... 336
The Treatment of Diphtheria by Blue Gum Steam..... 336
Pharmacy *vs.* the Average Physician 336
Test for Syphilis..... 336
Antiseptic Vaginal Injections..... 336
Picric Acid Test for Albumen..... 336

Original Department.

Experimental Researches on Chronic Alcoholic Poisoning.

BY DRS. DUJARDIN-BEAUMETZ AND AUDIGÉ, OF PARIS, FRANCE.

IN A WORK published by us five years ago, we showed by a series of experimental researches, which consisted in determining acute poisoning in animals, that the alcohols are endowed with a toxic power which is variable. We succeeded in finding for each member of the alcohol series, the fixed toxic dose,* *i. e.* the medium quantity which in correspondence with the weight of the animal experimented on, (so many grammes of the spirit for so many kilogrammes of weight) would produce death in the space of from 24 to 36 hours, with gradual and persistent lowering of the temperature. We found that the medium quantity of ethylic alcohol sure to cause death in the time indicated in eight grammes per kilogramme. In other words, if the animal weighed 30 kilogrammes (60 pounds), 240 grammes (8 ounces) of ethylic spirit would be required to produce a fatal result within 36 hours. The most toxic spirit we found to be potato spirit, or fusel oil; of which, to an animal weighing 30 kilogrammes, two ounces would be a speedily fatal dose.

The following tables will be of interest in summing up these results of acute alcoholic poisoning, which we have endeavored to place on a thoroughly scientific basis:

* The alcohol employed marking 100° centigrade in the alcohometer of Gay-Lassac,—a test of purity which never has been gainsaid. See the article *alcoometrie*, in the Dictionary of Therapeutics, by Dujardin-Beaumetz.

TABLE A.—DEGREE OF TOXICITY OF THE PRIMORDIAL ALCOHOLS.

Group of alcohols.	Designation of the alcohols and their derivatives.	Medium toxic doses per kilogramme of weight. In the pure state.	In the state of dilution.
		Grammes.	Grammes.
Alcohols of Fermentation.	Ethylic alcohol (C_2H_6O)	8.00	7.75
	Propylic alcohol (C_3H_8O)	2.90	3.75
	Butylic alcohol ($C_4H_{10}O$)	2.00	1.85
	Amylic alcohol ($C_5A^{12}O$)	1.70	1.50
Alcohols not of fermentation.	Chemically pure methyl alcohol (CH_4O)		7.00
	Ordinary wood spirit		5.75
	Œnanthylic alcohol ($C_7H_{16}O$)	8	
	Cetylic alcohol ($C_{16}H_{36}O$)	7.50	
Iso-alcohols.	Iso-propylic alcohol (C_3H_8O)		3.70 to 3.80
Poly-atomic alcohols.	Glycerine ($C_3H_8O_3$)		8.50 to 9.00
Derivatives of alcohols.	Acetic aldehyde (C_2H_4O)		1.00 to 2.00
	Acetic ether ($C_3H_8O_2C_2H_6$)		4.00
	Acetone (C_3H_6O)		5.00

These figures, indicating for the mono-atomic alcohols of fermentation a decreasing progression, are a demonstration of the law that in a series of analogous chemical bodies, the most toxic are those whose atomic formula is the highest.

If this law is broken in the case of the alcohols which are not the product of fermentation, it is due probably to their different origin, and their different solubility. We have, in fact, seen that the toxic action of œnanthylic and caprylic alcohols is sensibly increased when their absorption is rendered more easy by solution in ethylic spirit, while cetylic alcohol, which is quite insoluble, although the most elevated in the series, remains without effect upon the economy.

The above table enables the reader to compare the toxic power of glycerine, a polyatomic alcohol, with the other alcohols.

Moreover, in determining the toxic properties of the derivatives of the alcohols, we have shown the important part which aldehyde, acetic ether, and acetone have in alcoholic poisonings.

TABLE B.—DEGREE OF TOXICITY OF THE ALCOHOLS OF COMMERCE.

Ethylic alcohol and the alcohols of commerce.	Medium toxic dose, which, per kilogramme of the weight of the dog, will kill within 24 or 36 hours.	
	Crude spirit	Rectified.
Ethylic alcohol (dilute.)	7.75	
Fine wine spirit of Montpellier	7.50	
Brandy made from perry (by distillation)	7.35	
Cider brandy, and that obtained by distilling the marc of grapes	7.30	
Alcohol obtained from grain	6.95	7.15
Beet spirit	6.90	7.15
Potato spirit (whiskey from distillation of potatoes)	6.85	7.10
Potato whiskey, ten times rectified		7.35

By glancing your eye over the second table (table B), you will see that the fixed toxic dose obtained with the alcohol of commerce is the evident confirmation of the results which were furnished by the primordial alcohols. One might have foreseen that the toxic power of these liquors would vary according to the quantity of the different alcohols and their derivatives there mingled. For example, the whiskey of potatoes, which contains (in its crude state and apart from repeated rectifications) butylic and amylic alcohols, is very dangerous; but if, by a series of careful rectifications, all but the ethylic alcohol is removed, the noxiousness of the potato spirit falls to the minimum limit, *i. e.*, to that of chemically pure spirit of wine.

This first series of experiments, for which the Academie des Sciences accorded us the prize Montyon, has called forth numerous criticisms. I have been told that facts observed in the dog are not applicable to man; it has been said that the acute poisoning which we produced in this animal is not at all like the slow and gradual poisoning in the human body, which is designated under the name of "chronic alcoholism;" and that the results which we have obtained would have been modified if our alcohols had been administered daily and in small doses. In fine, it has been affirmed that the hypodermic method which we employed has the inconvenience of producing grave lesions under the skin, and that these lesions must vitiate the results obtained. In response to these objections, we instituted another series of experiments, which we were able to do through the generosity of Mr. Smith, of Stockholm, who has already done so much to facilitate the study of questions relative to alcoholism, and who deserves our gratitude for having encouraged in this country investigations tending to throw light on this interesting social problem. These new experiments, which this time were concerned with chronic alcoholism, consisted in the daily administration, by the alimentary canal, of the different alcohols of commerce.

We chose the hog as the subject of these experiments instead of the dog; this we did because the former animal bears the most resemblance to man in the structure of the digestive apparatus, and because the hog was the only animal that willingly consented to imbibe our alcohols.

It was not an easy matter to establish a piggery in the interior of Paris; a pig-sty is regarded by sanitary boards as a first-class nuisance, and it is difficult to obtain a permit to institute one. Thanks, however, to the interested support of the Prefect of the Seine, we were enabled to overcome these difficulties, and find suitable premises in one of the slaughter houses of the city of Paris, that of Grenelle.

It was in 1879, at the end of June, that these experiments were commenced, with ten pigs, aged about four months, and belonging to two different litters. These swine were of the kind designated as Tonquins, or Anglo-Chinese.

To this first series, in which each animal took a different kind of alcohol except the last one, which was not submitted to the alcoholic regimen, was added a second series of eight pigs in November; these were all about three months old, and of the same race. All the pigs of both series had previously been castrated. Our animals were placed under excellent hygienic conditions; isolated from each other in separate pens, they were allowed to come together in a little yard after their meals. They were fed twice a day, the first meal at 9 A. M. and the second at 6 P. M., and the food consisted exclusively of mashed potatoes, bran and meal. We never varied

this fare except when, on account of sickness, we put them on a milk diet. The alcohols which we mixed with their nourishment were always prepared and administered by one of us at the morning meal. These potions were generally readily absorbed, and it was only when the animals took the spirit in too large doses, or the administration was too prolonged, that they lost their appetite. They were weighed every eight days, and the weighing was always performed in the presence of one of us.

The doses of the alcohols which we administered varied from 1 gramme to 2.60 grammes per kilogramme of the weight of the animal. But generally it was 1 gramme or 1.50 grammes that we gave, for whenever we exceeded these figures our animals became sick; they had diarrhœa, and refused to eat. The effects of alcoholism were manifested in them more particularly by a somnolence or a state of torpor, whose duration varied with the strength of the alcoholic potion. After these preliminary statements we come to the history of our experiments.

FIRST SERIES OF EXPERIMENTS.

Subjects.—Ten pigs, bought in the suburbs of Grignon, at the farm of M. Marsonhaute, arrived at the *abattoir* of Grenelle June 7, 1879. Age, three months. Nourishment, a mixture of bran, meal and potatoes, with water and milk. These animals, which were branded on their backs with the number of their rank, were placed in pens bearing also the same number. Henceforth we shall designate them by the numbers by which they were distinguished. They were weighed for the first time June 11th, and their weight was as follows:

No. 1	11	kil.	gr.	No. 6	8	kil.	gr.
" 2	9	"	"	" 7	10	"	"
" 3	10	"	"	" 8	8	"	"
" 4	9	"	500	" 9	10	"	700
" 5	8	"	700				

Weighed again the 18th of June, their weight was as follows:

No. 1	12	kil.	500	gr.	No. 6	9	kil.	800	gr.
" 2	10	"			" 7	10	"		
" 3	11	"	500	"	" 8	9	"		
" 4	10	"			" 9	12	"		
" 5	9	"	800	"	" 10	11	"		

[A kilogramme is about two pounds Avoirdupois.]

June 21st we commenced the administration of the alcohols to all except No. 10.

To No. 1,	Ethylic alcohol marking	100° C.
" 2,	Potato spirit ten times rectified marking	47° C.
" 3,	Potato spirit purified with animal charcoal marking	46° C.
" 4,	Crude potato spirit marking	73° C.
" 5,	Rectified grain spirit marking	92° C.
" 6,	Crude and impure grain spirit marking	37° C.
" 7,	Crude beet alcohol (flegmes) marking	34° C.
" 8,	Rectified beet alcohol marking	92° C.
" 9,	Methylic alcohol of commerce marking	90° C.

The potato spirit used in our experiments came from the distilleries of Sweden; the grain spirit from the house Porion, of St. Omer; the beet spirit was sent to us by M. Dante-Dambricourt, of Steune (North); the methylic alcohol was bought of the house Rousseau & Co; the ethylic spirit was consigned to us by one of our friends, M. Delval, a manufacturer of chemical products, who made it himself from the products of his harvest.

The dose of alcohol was always given in the morning, being mixed with the food in the trough. At first the pigs took their spirit rations with little apparent effect. But after several days, the same dose being continued (1 gr. 50 per kilogramme), their appetite diminished; they were very thirsty, drinking water with avidity. July 5th we were obliged to suspend the administration of the alcohols. Their weight had increased by several kilogrammes for each one (from two to eight kilogrammes).

July 15th. The alcohols were administered anew, and the dose was raised to 2 grammes per kilo. The animals soon became sullen, slept a part of the day, and several refused their rations. We were obliged the second time (July 21st), to suspend the alcohol. At this date the weight of the hogs was as follows:

No. 1	23	kil.		No. 6	15½	kil.	
" 2	19	"		" 7	19	"	
" 3	19	"		" 8	16	"	
" 4	18	"		" 9	21½	"	
" 5	16¾	"		" 10	20	"	

July 26th the experiments were renewed, with the same dose of two grammes per kilo, which was continued till the 31st July. At this epoch several of the animals had diarrhœa and No. 9 passed blood with his excrements. The alcoholic regime was interrupted till the 13th August. The weight of the hogs at this date was as follows, the figures representing kilogrammes, and being arranged in the order of the numbers of the animals (this method of stating weights will be adopted henceforth): K. 30; 25; 24; 26; 23; 20; 26; 20; 30; 26.

August 14 the experiments were renewed, and the dose of alcohol was raised to two gr. 25 per kilo.

August 17th the weight is as follows: 31¾; 26½; 25½; 28¾; 23½; 20; 27; 21; 31; 27 4-5.

The animals took their rations well, except Nos. 6, 7 and 9, which would leave their mess and return to it by times. After their meal they were quite drunk; would stagger and remain lying a part of the day. The diarrhœa from which several of them were suffering, had ceased.

August 21st their weight was as follows: K. 34¼; 29½; 27½; 30½; 26½; 22½; 29¾; 23; 33½; 30 1-5.

Aug. 31st. Almost all the hogs, which for several days have been drinking a great deal of water, have a diarrhœa, and void a blackish material. Nos. 3, 6, and 9 pass glairy mucus. No. 6 coughs a little. The alcohols are suspended for a time. Weight, K., 36 4-5; 31½; 29½; 33½; 27½; 24; 31⅓; 23; 4-5 35 4-5; 32 7-10.

From the 1st to the 4th Sept, the animals take no spirits. Weight, K. 38.8; 34.3; 33; 36.2; 30.5; 26.4; 34.2; 26; 39; 32.9.

Sept. 5th. The alcohols were resumed, dose two gr. per kilo: This quantity was continued till the 10th. At this period many of them take their rations badly. Alcohol suspended till Sept. 16th. Sept. 17th, the weight is as follows: K. 42.3; 36.2; 34.2; 39.5; 31.4; 28.1; 37; 28.3; 40.8; 34.6. Alcohol was resumed in the dose of two grammes per kilo. Food of hogs, a mash of bran, potatoes and meal, enough to sustain, but not to fatten.

Sept. 23d. No. 7 (the one which takes crude beet spirit), keeps his litter, refuses food, and passes slime. Alcohol suspended. No. 5 also takes his rations badly. Weight, K. 47, 40.9, 37.6, 44.1, 30.8, 31.7, 38.7, 29.5, 45.5, 43.

From Sept. 24 to Sept. 27, the alcoholic regimen is omitted. The animals take their nourishment with much greater avidity. Sept. 25th, No. 5, which has kept his bed for two days, has fever; belly is covered

with sweat; refuses all food. Sept. 26, is given milk, but vomits it, as also the water which he drinks in abundance. Urine has a greenish (biliary) color. The 27th he succumbs.

The necropsy discloses an effusion of blood in the peritoneum, and a complete perforation of the stomach, produced by a nail which the animal had swallowed some time previously.

Sept. 27th. No. 7 is better. Alcohol is resumed, in doses of two gr. 60 per kilo. Continued till October 3. The spirit causes return of diarrhœa in almost all the animals. They are constantly in a deep stupor. They refuse their food; two or three of them pass greenish urine. No. 9 seems most sick, and takes his nourishment with the most difficulty; this is, perhaps, owing in part to the repulsive empyreumatic odor of the methyl spirit. The weight is now as follows, the place of No. 5 being supplied by a dash: K., 52.8; 45.8; 42.5; 48.3; —; 34.6; 43.6; 33.5; 49.1; 47.6.

October 4, the dose is reduced to 1 gr., 30 per kilo, which is continued till October 11th. During this time the animals recover somewhat from the deep stupor in which they had been plunged, under the influence of the larger doses. October the 11th, the weight is as follows: K., 55.2; 47.2; 46; 52; —; 37; 46.8; 34.8; 51.9; 50.

From the 12th to the 19th of October, the dose is raised to 2 grammes per kilo. The animals take it without great reluctance, except No. 8, which eats badly. They keep their beds after their meal, some sleeping, others gnawing their straw. No. 6 has diarrhœa, and No. 7 coughs a little. Weight: K. 58.; 52.3; 49.2; 56.7; —; 40.8. 51; 38.8; 55.5; 54.7.

The two-gramme dose is continued till October 26th. At this date No. 7 is quite sick, coughs more and more, keeps his bed all the time, has fever and refuses to eat. He is put on flour and milk, and the administration of the alcohol is interrupted till November 5th. At this date the weight of the hogs is as follows: K., 66; 58.7; 55.2; 62.8; —; 44.8; 56.4; 42; 62; 59.

November 5th, the spirit is resumed in the dose of 2 gr. per kilo., and continued till November 20th. The swine pass the whole day in profound stupor. No. 2 has coughed several days, but eats well. No. 9 seems very feeble, and lies down before finishing his meal. Weight: K., 76.5; 66.8; 66.8; 74.3; —; 55.8; 66.8; 51.5; 74; 72.

From the 20th to the 28th November, we tried again to increase the alcohol to 2 gr. per kilo., but at the end of several days the animals became so overcome with drunkenness that their heads dropped in their troughs, and asphyxia threatened them. Several of them seemed to be paralyzed in their hind limbs, dragging themselves along by their fore legs.

November 29, the dose is reduced to 1 gr. 60 per kilo., which dose is continued till December 10th. During this period, Nos. 1 and 2 take their rations well, and sleep almost immediately afterward. No. 3 takes his food well also, but his sleep is less profound; he remains sitting and gnaws his straw. No. 4 eats well, lies down, drags himself along seeking cooler places. No. 6 is very restless, moves about continually, does not lie down. No. 7 sleeps profoundly, immediately after his morning meal. No. 8 takes only a part of his rations and rests an hour or two before finishing his meal. No. 9 does the same, only takes all day for his meal. As for No. 10, he takes a walk in the yard after his meal, and if he happens now and then to sleep, he never has the labored and noisy respiration which is observed in the others.

December 11th and 12th, the animals take nothing. The weather is very cold at this time.

December 13th and 17th, the alcohols are resumed in the dose of 1 gr. 60 per kilo. After having taken their rations the animals become somnolent, but their sleep is less profound than it was three weeks ago. None of them have diarrhœa. Nos. 2 and 3 cough a little. The cold is intense. Weight, December 17th: K., 86; 76.3; 80.3; 83.3; —; 67; 77; 61; 87; 80.4.

From December 18th to December 24th, we give again 2 grammes per kilo, but at this last date we are obliged to interrupt the administration by reason of the sickness of No. 9 This hog, which has eaten poorly for several days, has fever and its head is from time to time covered with a cold sweat. It can no longer stand on its legs, and cannot move except by means of its fore feet. It has neither diarrhœa nor vomiting. It is now put on milk for nourishment, and of this the creature takes but little.

From December 25th to January 2d, 1880, the experiments are suspended. No. 9, which has coughed a great deal every day to this time, has begun to improve, and takes ordinary nourishment.

From January 2d to January 24th, we give only 1 gr. 50 per kilo., on account of the cold weather; to No. 9 we give only 1 gramme; he is now doing very well. Nos. 3 and 4 cough, but they eat and drink very well. No. 6 is very weak in his hind limbs. All the hogs, including Nos. 7 and 9, are very glum all day. Nos. 1 and 2 are a little less sullen; the latter coughs a little. They refuse to go out of their pens. January 24th, they weighed as follows: K., 102; 88; 100; 99.5; —; 88; 91 5; 76; 98; 93 5.

From January 25th to February 1st, the same doses of 1 gr. 50 kilo. No. 2 coughs a little more, but continues to take his rations well. No. 4 eats with little avidity, but seems well. No. 6 always seems paretic in his posterior members. No. 10 has eaten poorly for several days, and coughs much.

We here give an abridgement of this history down to the 3rd of April. The dose of 1 gr., 50 per kilo, was continued from the 1st to the 18th of February, when, owing to increase of the pathological symptoms —stupor of nearly all, paresis of some, cough and catarrhal condition with labored breathing of several— the dose was lowered to 1 gr. per kilo, which was continued till March 11th, when the weight of the animals was found to be as follows: K. 129; 113; 137; 128; —; 120; 119; 105; 132; 107.

From this it will be seen that all had gained in weight. For several days No. 4 had difficulty in urinating, and his urine was tinted green. No. 9 continued to cough. No. 10 was oppressed in its breathing, ate little, and remained lying and sullen all day. The dose of 1 gr. per kilo was continued till April 3rd, when the weight was: K. 137; 121; 146; 135; —; 129; 129.7; 114; 141; 113.

Nos. 1 and 2 continue well and take their rations quickly. Nos. 3 and 6 walk with difficulty, and when they are lying down their limbs seem agitated with trembling. No 4 remains always lying, and has become very cross. No. 7 has the same trembling as Nos. 3 and 6. No. 10 eats a little better than early

in the winter, but has always labored breathing and cough.

From April 3d to May 9th the experiments were interrupted. We were out of alcohol, and were awaiting a decision of the municipal council which should enable us to import free of duties the supplies which we wanted. At the latter date (May 9th) the weight of the animals is as follows: K. 148; 131; 158; 149; —; 143; 140.5; 123; 154; 121.

The alcohol was resumed May 9th in the dose of 1 gr. 50 per kilo, which dose was continued till May 3rd, when the following notes were made: "Nos. 1 and 2 take their rations well and go to sleep immediately. No. 3 also eats well and sleeps profoundly; can hardly stand, and has to be helped into its pen. No. 4 also walks with difficulty; eats well. Nos. 6 and 7 take well their mess; their sleep is accompanied by a noisy breathing; the first is weak in its hind limbs. No. 8 eats with difficulty; seldom however leaves his mess in his trough all day; sleeps much in the daytime, but not so soundly as the others. No. 9 takes his rations poorly, leaving his mess for hours untouched in his trough; is feeble in his hind limbs, remains lying most of the day, but sleeps little; for several days he was sick, had fever; at certain moments there was contracture of the jaws, and when we touched him to make him get up he made plaintive groans. No. 10 has always labored breathing, seems fatigued, has blear eyes, eats little and remains lying in the water a good part of the day."

It is then, especially by a somnolence more or less prolonged, that drunkenness manifested itself in our hogs. Nos. 3, 4, 6 and 7 showed this besotted stupefaction in the most marked degree. None of them had diarrhœa at this time. The trembling which several of them had in February did not now exist. Nos. 3, 6 and 9 had the most pronounced paresis of the posterior extremities. Their weight May 23rd was as follows: K. 153; 132.5; 163; 154; —; 151.5; 144.5; 130; 156.5; 125.

From May 24th to June 19th we continued the same doses of 1 gr. 50, also from June 19th to June 28th inclusive. From June 29th to July 4th the animals took no alcohol. From July 5th to July 8th the spirit was resumed in the same doses as previously.

Weight of hogs June 19th: K. 160.5; 141.5; 175; 161.5; —; 158; 153; 138; 161; 129

Weight of hogs July 4: K. 169 5; 150; 185; 170; —; 174; 160; 148; 174; 134.

With the object of knowing what were the disorders from which our animals were suffering after a year of alcoholic poisoning, we killed one of them, No. 3, the one which had been taking the potato spirit purified by animal charcoal. The necropsy which we made, checking our observations by comparing the results which we obtained with the post mortem appearances in a certain number of hogs that had never been dosed with alcohol, showed us that nearly all the organs except the stomach, which in the neighborhood of the great curvature was intensely red, very vascular and mammillated, presented a normal aspect without appearance of lesions. The liver was also congested, the bands of connective tissue which separate the hepatic lobules were not thicker than in the normal liver, but there was an abundance of round cells, or lymph cells, in the peri-lobular connective tissue. These cells were especially numerous around the branches of the vena porta and the bile ducts. This lesion, which is noted in all the congestions of the liver, which is, for example, observed in the infectious fevers, is allied to inflammatory congestion. There was neither cirrhosis nor fatty degeneration.

The kidneys contained a large quantity of fat. Sections hardened in osmic acid showed abundance of fat granules in the epethelial cells of the convoluted tubes. Moreover, in the interior of the glomerules and many of the convoluted tubes we found, here and there, blood thrombi, such as are seen in the acute stage of Bright's disease. But the same appearances were presented by the kidneys of three of the hogs which had been reared on ordinary fare, and which we killed to enable us, by comparison, to check our observations. Therefore we did not feel prepared to say that the presence of abundance of fatty granules and blood thrombi in the cortical substance of the kidney of No. 3, was due to one year's dosing with potato spirit. Prof. Cornil kindly assisted us in these examinations.

From the 9th to the 14th July the animals take no alcohol.

From July 15th to 25th the dose is resumed of 1 gr. 50 per kilo., which is administered one half in the morning, the other half in the evening. July 25th the weight is as follows, the place of No. 3 being represented by a blank, as well as the place of No. 5: K., 183; 163; —; 183; —; 181; 177; 162; 187; 138.5.

From July 26th to August 12th no alcohol is given. Weight at this date: K., 183; 165; —; 181; —; 184; 175; 161; 183; 135. The weight of No. 10, which has now been sick for a long time, has been steadily diminishing. From August 13th to September 1st the dose of 1 gr. 50 per kilo. is renewed, half morning and half evening. Weight: K., 192; 167; —; 186; —; 187; 179.8; 169; 194.2; 143.

Since we have been giving the alcohols in two doses, the first at the morning, the second at the evening meal, the sleep and the stupefaction of our animals is less profound. No. 1 continues to take his rations well. No. 2 has for several days had little appetite. The same may be said of No. 4; the latter has for some time had bilious vomiting; urine is yellowish, also the conjunctivæ; he seeks the water, and lies stretched in it all day long. No. 6 takes his rations well, but is always weak in his limbs, and has difficulty in walking. No. 7 can scarcely be prevailed upon to take his alcoholic mixture; he has, for a few days, passed blood in his excrements; he stands tolerably well on his feet, but carries his head constantly drooped, and is very glum. No. 8 is more gay than all the others; he seems vigorous, and swallows his food readily. No. 9 constantly seeks the cool places, and generally sleeps in the water; has always repugnance toward taking his nourishment with the methyl spirit mixed with it. No. 10 eats less and less; can scarcely swallow; ir quite stupid; and when obliged to rise up, looks about without knowing what to do; his skin is wrinkled, and is quite red in the morning. This animal had bronchitis during the winter, and has never recovered from it.

From September 2d to 4th, the same doses, morning and evening.

From September 5th to 10th, no spirit with the rations.

From September 11th to 14th, resumption of the

alcohol as before given. The 14th we are obliged to suspend the spirit, as several of our hogs are very sick. Some have for several days been unwilling to eat, and appear to have severe pains when we force them to move. On examining their feet, we find vesicles about the extremity of the digits; the integument of the interdigital spaces is tumefied and of a whitish color. We find the same vesicles on the side of the face, the snout, and the tongue. This constitutes a disease known by veterinary surgeons as aphthous fever, or *cocotte* (influenza). It is a very contagious affection, as we had occasion to know, for all our hogs had it one after the other. It was brought to the *abattoir* by diseased sheep.

September 27th, the weight of the hogs is as follows: K., 194; 175; —; 183; —; 192; 191.5; 174.5; 207; 147. Some of our subjects are to-day well of their aphthous fever, for which we employed only the treatment of frequent renewal of their straw, cleansings, and astringent lotions.

October 3d. The hogs are all well of their influenza, and eat with an excellent appetite. We renew the usage of the alcohols in the dose of 1 gr. 50, one half morning and one half evening. On the 15th we were obliged to stop the alcohol on account of the sickness of No. 6, which is passing a great quantity of what seems to be bile; refuses to eat, and keeps on his straw litter all the time. All the other hogs seem well. Their drunkenness manifests itself by an almost perpetual sottishness, from which they are free the days when they take no alcohol.

Oct. 18th, the alcohol is resumed; same dose. Weight. K. 196; 184; —; 190; —; 198; 193; 178; 217; 156.

[We here abridge the history of these experiments, as but little change or interruption occurred down to Feb. 26th, when the administration of the alcohols was again suspended for a time, owing to failure in the supply. Nos. 4 and 6 have lost several kilogrammes in weight; all have poor appetite. No. 9 still passes bile in his excrements. No. 10 does not recover from his bronchitis. March 6th the hogs weigh: K. 197; 191; —; 188; —; 204; 196; 192; 217; 154. No spirit rations till April 13th, when they weigh. K. 206; 203; —; 204; —; 213; 210; 206; 226; 155. It will be seen that during this long period of nearly two months, when no spirits were given they all increased in weight; this increase was especially noticeable in No. 4 and No. 6, which were very feeble two months previously.]

April 13th the alcoholic regime is resumed, and continued till the 30th, in the same doses of, 1 gr. 50 per kilo. But the appetite continuing to be wanting in several of our subjects, and Nos. 4, 6, 7, and 9 leaving almost untouched their evening meal, we deem it advisable to reduce the daily dose to one gramme per kilogramme.

This quantity we give with the morning meal, from the 30th April.

May 14th the weight of the animals is as follows: K. 206; 204; —; 203; —; 211.2; 209.5; 201.6; 226; 142.

From the time they recommence the alcohol, their weight ceases to increase: with several it even diminishes a little. No 10 is more and more sick, is very thin, cannot walk, and has to be dragged when we wish to move him. For several days he has taken nothing but a little milk. May 15 he breathes badly, and is threatened with asphyxia. He succumbs the 17th. The necropsy discloses the lesions of chronic pneumonia, contracted in the winter of 1879-1880.

June 4th the weight of our seven hogs, to which since April 30, only 1 gramme per kilo, daily, of alcohol has been given, as follows: K. 210; 206; —; 208; —; 217; 216; 206; 229.

From the 4th to the 23d the same daily dose is continued. From the 24th to the 27th the animals take nothing but their food. Weight on the 27th: K. 214; 211; —; 212; —; 224; 219; 214; 232.

From the 28th June to the 26th July they receive only one gramme per kilo, daily. As long as they take only this quantity they have a better appearance and an improved appetite, and those that do not eat all their morning mess at the time, finish it before the meal of the evening.

Their weight Aug. 18th, at which time the spirit ration is suspended for a few days, is as follows: K. 221; 219.5; —; 217; —; 229; 223; 224; 239.

From the 24th August to the 6th Sept. the one-gramme dose is renewed, to be interrupted from Sept. 6th to Sept. 12th; to be resumed again from the 12th to the 18th, when it is again stopped till the 23d, when for three days the same spirit rations are again administered.

Weight of the animals Sept. 18th: K. 222; 224; —; 219; —; 228; 220; 226; 239.

Weight on the 25th Sept: K. 223; 223; —; 220; —; 228; 219; 220; 242.

No 1 and 2 always take their rations well; their weight has for sometime remained stationary. Nos. 4 and 6 also take their food, but not so readily, and frequently come back to it after leaving it for a while; they always seem to feel badly, and are easily fatigued. No. 7 has for some time had difficult respiration; is put out of breath by the least movement; has little appetite. No 8 is always vigorous, and seems well. No. 9 continues to take his rations with difficulty, and the weakness in his hind limbs persists.

From Oct. 1 to Oct. 25th we continue the same dose of one gramme per kilo, which is suspended from the 25th to the 28th, on account of the refusal to eat of Nos. 1, 6, 7, and 9. At this date the weight is as follows: K. 221; 222; —; 221; —; 225; 216; 223; 241.

Oct. 29 the usual dose is renewed and continued till Dec. 24th.

Nov. 18 we killed Nos. 7 and 8. namely, the two that took the beet spirit—the one crude, the other rectified. The necropsy was performed immediately after the death of the animals, in presence of Prof. Cornil, and with his assistance.

The following memoranda indicate the findings of this autopsy. In both animals there was a marked alteration in the first portion of the aorta, consisting in a white patch, projecting into the lumen of the vessel. This was situated just above the sigmoid valves. The liver and the kidneys presented nothing appreciably abnormal to the sight. The urine was of normal density, and contained no albumen. The stomach of No. 8 was normal. That of No. 7 presented a thickening of the mucous membrane, which was of a slate gray color. We found several hydatid cysts in the liver and lungs.

Portions were reserved for microscopic examination by Prof. Cornil. We here present the results of this examination, as communicated to us by the professor:

Aorta.—In the two hogs examined, although the aortic valves were normal, we noted a marked thickening of the aorta, occasioned by endarteritis, a little below the origin of the innominata. The projecting patches, irregular in form, smooth and even, presented the same color as the surface of the vessel. The tunica media and externa in this portion of the vessel were unaltered. The morbid portions of the two aortæ were placed in alcohol. One half of one of the patches was dried, after maceration in the alcohol. We did not see in this specimen, the modifications of color or the opacity which are observed in atheromatous and calcifying endarteritis.

Sections of the hardened patches, made perpendicular to the surface of the vessel, showed an abnormal thickness of the membrane, which measured ⅓ millimetre. This tissue of thickening endarteritis is constituted by fibrillæ of fine, dense connective tissue, separated by fusiform cells. These are connective tissue cells, with nuclei very visible. They appear fusiform on perpendicular sections, but they are in reality flattened and discoid, like their nuclei. The same disposition of this tissue is observed in all the coats, being continued without well-defined lines of demarcation into the middle coat. The inner aspect is covered by a vascular endothelium. The thickened internal tunic gives no traces of calcareous degeneration.

Stomach.—One of the hogs presented a particular grayish, somewhat slaty discoloration, a marked dryness and induration of the surface of the mucous membrane of the stomach. To the naked eye this stomach seemed to differ notably from that of the other hog. At the same time, on comparing microscopic preparations which we made of these stomachs, we observed no difference. In both the cylindrical cells of the surface were preserved intact, the vessels were not engorged. The glands, as seen in sections giving their whole length, and the interglandular connective tissue, as well as the stratum of connective tissue, situate below the *culs de sac*, were normal.

The liver and kidneys appeared normal.

Dec. 24th the weight in kilogrammes of the surviving hogs, Nos. 1, 2, 4, 6 and 9, taken in their order, is as follows: K. 222, 221, 216, 219, 234. This weight remains almost stationary for the first two, while the weight of the others is diminishing; they, moreover, seem very feeble and it is deemed necessary to suspend the experiments till Jan. 8th, 1882.

Dec. 29th No. 6, which refused to eat the evening before, cannot rise; ears and extremities cold; does not seem to see clearly. After remaining several days without taking food, he at last consented to swallow a little milk, and finally, the 6th of January, he takes his nourishment as usual.

From January 9th to 31st the alcohol is resumed in the dose of 1 gramme per kilo. No. 6 can take only half the ordinary ration. To make the others clean their troughs, the evening meal is withheld.

Jan. 16th the weight of Nos. 1, 2, 4, 6 and 9 is as follows: K. 223, 221, 214, 207, 230.

From Feb. 1st to 8th the alcohol is stopped. Nos. 4, 6 and 9 continue to emaciate. Nos. 1 and 2 remain about the same. Weights: K. 219, 223, 211, 199, 226.

From Feb. 9th to March 2nd only one meal a day with alcohol, 1 gr. per kilo. No. 6 (the hog to which the crude grain spirit has been given) refuses to take any more alcohol, and will accept no nourishment but milk.

The weight of the animals March 2nd is as follows: K. 217, 226, 207, 221. No. 6 cannot be weighed; is incapable of walking or even rising. He died the morning of the 9th of March. Necropsy the next morning in the presence of a veterinary surgeon, M. Jay:

Post Mortem Changes.—The liver weighs 1300 grammes; is very voluminous; is completely degenerated; its tissue, which resembles that of a sponge, offers a blackish and desiccated appearance. A piece thrown into water, floats; the internal tunic of the stomach is red and congested in the region of the great cul de sac; the mucous membrane of the intestine in all its first half, but especially in the neighborhood of the duodenum, presents a violaceous ecchymotic appearance; there exist even a number of hemorrhagic spots.

Kidneys.—The kidneys were enlarged, their tissue is softened, and there is a creamy liquid in the pelvis resembling pus. The bladder is empty, therefore the urine cannot be examined.

Heart.—The heart is augmented in volume, its tissue is fatty. Valves healthy.

Lungs.—The lungs are congested and contain numerous apoplectic foci.

Brain.—The cerebral tissue seems in several places softened. The same is noticed with respect to the spinal cord.

Several portions of these organs, hardened in alcohol, were sent to Prof. Cornil for histological examination. He unfortunately was absent from Paris, and on his return found them spoiled.

March 2. We cease the administration of the alcohols, for want of material.

April 6th the weight of the surviving hogs is as follows: K. No. 1, 219; No. 2, 228; No. 4, 211; No. 9, 224.

The weight of all these animals increased somewhat from this date, under the ordinary food regimen.

July 16th, after four months abstinence from alcohol, their weight is as follows: No. 1, 227; No. 2, 234; No. 4, 224; No. 9, 235.

July 18th No. 9 was carried in a cart to the market of Villette to be sold, but on arriving there it breathed so badly, and was so prostrated, that it was deemed necessary to dispatch it immediately.

The three others were killed the 24th July, in our presence, and the necropsy, made with the assistance of Prof. Cornil, disclosed, in the case of No. 4, (the animal fed on crude potato spirit), congestion of the lungs, and especially of the liver, while all the organs of the other animals to which had been given the rectified alcohols, presented no appreciable lesions.

The meat of these hogs which seemed to us perfectly healthy, was sent to the Halles. But the pork inspectors rejected it. They claimed to have found sanguineous effusions in the interstices of the muscular fasciculi, and serous exudations in the cellular tissue.

In a concluding paper we shall present the results of the second series of experiments.

"Sarco-Peptones."

(σαρξ, σαρκος—*flesh, and* πεπτω—*I digest.*)

By C. W. Tangeman, M. D., Cincinnati, O.

THE subject of nutrition, with digestion and assimilation, is an interesting chapter in physiology. It cannot be studied too carefully by the physician, since he is called upon so frequently to apply his theoretical knowledge in a practical manner. It is not my intention to go into a description of the process of digestion, unless by way of comparison, inasmuch as I want to attempt to show what changes take place in nitrogenous articles when introduced into the stomach of a healthy individual, what causes the change, and, lastly, what can be gained by preparing a food artificially in which these changes have taken place outside of the stomach, during the process of manufacture.

The sum of the products of digestion of nitrogenized principles in the stomach can pretty safely be regarded as a conversion into albuminose or peptones by the action of the gastric juice. This process does not merely consist in dissolving the various nitrogenized principles but they change their property entirely; the chemical composition and general properties vary according to the principles from which they are formed. We must indeed acknowledge that our knowledge of the properties of albuminose is quite limited, but this much is very certain: that the change takes place in all nitrogenized principles that are liquefied in the stomach by the action of pepsine, the essential and main constituent principle of the gastric juice. Aside from this it also changes them in such a manner as to render them endosmotic, so that we are safe in assuming that the entire process of digestion and absorption of albumen takes place in the stomach, and if any passes out into the intestine the quantity is quite small.

The process was formerly called catalytic, but the signification of this term, when used in this connection, is so indefinite that it seems almost as though it were used only to express an absence of a positive knowledge on this subject.

Pepsine has been manufactured and administered as a drug in instances where the natural supply seemed deficient, but in nearly all cases that much chalk or wheat flour answers the same purpose. The different preparations when subjected to a test in the laboratory are found to be practicably inert; they are not reliable or uniform. Many of the preparations of pepsine and pancreatine on the market at the present time are absolutely worthless, their taste and smell is sufficient to nauseate the patient, to say the least.

The question of nutrition in many cases is quite an important one, and deserves the attention that has been given it of late. One kind of diet cannot be prescribed all the time in any given case, unless special attention has been given to the preparation of it. This is so with food taken by the healthy, and much more so in many diseases of the stomach, etc.

Having seen that the gastric juice is the essential factor in stomach digestion with pepsine as the main element, we are enabled to deduce our laws, and know in what class of cases nutrition is benefited by the addition of artificial agents to the food. It has enabled us also to prepare and digest food outside of the stomach, leaving nothing more than absorption to this organ, which it readily performs, even though there is atrophy of the peptic glands, or a chronic inflammation of the mucous membrane. Rest to a diseased organ is recognized by all authorities as the essential feature in the treatment of inflamed structures. This law also is proven to hold good in inflammations of the stomach. To recognize a principle theoretically and apply it practically, are not infrequently two entirely different problems. When food is introduced into the subject it demands work from this organ to digest it; but when it is in a diseased or weakened condition, food that requires digestion acts as an irritant; nature makes an effort to right herself by ejecting the material acting as an irritant. A long list of remedies advocated for the relief of a certain pathological condition is a pretty safe criterion that all or nearly all of them are deficient in some respect, since it certainly would not be very remunerative for manufacturers to place goods upon the market for which there is no demand. This has been the case with artificial and concentrated foods. We are perfectly safe in the assertion that among thee innumerable brands of beef extracts, malt extracts, meat powder, beef juices and preparations of blood, there is not one that will fully meet the demands of even ordinary cases. I say ordinary cases, since there are occasionally patients apparently not benefited by anything. Many preparations have been over-rated, which is largely due to the many endorsements that manufacturers procure from physicians of good standing (possibly to advertise themselves, or parade their long and high-sounding titles).

The article called Sarco-Peptones is a peptonized extract of beef, manufactured by Rudisch, and placed before the profession by Parke, Davis & Co. In my hands it certainly has given better satisfaction than any like article that I have given a trial, and bids fair, in my estimation, to become the most valuable of all foods extant. It contains a larger percentage of albuminous compounds, which is the most important nutritive principle of beef. Home-made beef-tea, which is so generally prescribed and the mentioning of which excites disgust and nausea in many individuals, we find does not contain albumen in sufficient quantity to nourish an individual—this every casual observer has had an opportunity to observe for himself. Prof. Bamugartner* evaporated four ounces of beef-tea in a water-bath, not to perfect dryness, so there should be no waste or possible destruction. The residue was then put in a balance and found to weigh fifty-one grains. The largest quantity of this residue was possibly then yet anything else but nutritive. Liebig's extract of beef enjoyed an enviable reputation for a long time, but, to quote the words of the eminent physiologist, Carpenter: "One pound of Liebig's extract is sufficient to produce 70 pints of good beef-tea, of which each pint contains the soluble ingredients of ½ pound of beef." Such extract can communicate a strong flavor of meat to vegetable soups, and contains the more important salts of flesh, but it must not be supposed that it can supply the place of a corresponding quantity of meat to that from which it is prepared, since it contains

*St. Louis Courier of Medicine.

but a small proportion of albuminous compounds. It has been shown experimentally, and verified clinically, that man requires a certain amount of albumen daily, which is changed to peptones in the stomach by the gastric juice.

For some time already peptones of different kinds have been introduced into the stomach as peptones, especially in Germany.* In the United States milk peptonized by a preparation called pancreatine, the active principle of the pancreatic juice, has been largely employed, but in many cases the results were quite unsatisfactory, since few patients will be found who can take milk to the exclusion of every other kind of food, while other articles, such as beef, does not seem to be acted upon very well. Since chemists have recoganized the growing demand for a beef peptone, a number of preparations have been brought forward, but there two important obstacles that must be overcome. In the first place it must be a nutritive, and in the second place it must be a palatable article, otherwise it will be worthless on the one hand and rejected by the sick on the other. Witte and Chapoteaut produced an article rich in peptones, but its administration caused nausea. It has been attempted to cover up the taste by the admixture of flavors, syrup, etc., but the flavor of beef under this plan is also destroyed, which practically renders the preparation unfit for use. The desideratum was to make an article to contain the largest percentage of peptones, in such a form as not to destroy the natural odor of the beef; make it palatable, without the use of correctives, and put it up in such a manner that it will keep without losing its properties or becoming stale and nauseous. According to an analysis made by Dr Frankl, "sarco-peptones" contains a larger amount of albuminoids and nutritive principles of beef than is found in any other food, and at the same time it is put in such a form as to be agreeable to the most fastidious taste.

There is still another article of food employed in therapeutics which compares favorably in nutritive properties to sarco-peptones, namely, desiccated bullock's blood. The nutritive properties of blood are generally conceded to be good, whether employed fresh or in a prepared state, but the taste is so objectionable that correctives are invariably used for its administration, and then it causes nausea and vomiting far too often to become a popular remedy. In a series of 51 cases reported by Guerder,† of Paris, where defibrinated blood powder was employed, only 44 cases tolerated it well, while 7 rejected it. G. claims that in three out of these unfavorable cases, the prompt vomiting of food is excusable, since the patients were typhoid fever convalescents. It is a generally observed symptom that typhoid fever patients vomit very readily, but just in this class of cases, I have observed some of the most remarkable results obtained with sarco-peptones, the patient not only retaining the food, but it seemed to cause a disappearance of the irritability of the stomach; in fact, I have yet to see the instance where it was vomited. The cases appended below are selected to demonstrate the various kinds of patients to which this article was given and the effect that it produced. In nearly all of the cases, some or all of the different stimulants or foods had been employed, so that a comparison could easily be made. The class of patients in which we are oftenest called upon to resort to artificial alimentation are those suffering from phthisis. In nearly every instance there is a manifest repugnance to food which cannot be overcome by ordinary remedies, while in this disease, above all others, a strong nourishing diet is indicated. Dujardin-Beaumetz and Debove, of Paris, have resorted to forced alimentation—feeding the patient a certain number of times during the day by means of inserting a tube into the stomach through the œsophagus. In their experiments a meat-powder was largely used, and they reported a number of cases that evidently were benefited by the treatment, clearly showing the importance that should be given to alimentation in this class of cases. The procedure, in and of itself, to carry out this plan of treatment is not so difficult as it is objectionable, and in reality can only be carried out properly in a well-arranged hospital with trained nurses.

The meat-powder cannot well be given to patients on account of its sickening taste. No matter how it is disguised or prepared, it will cause nausea. Where there is not an absolute disrelish for food, and the patient can be tempted to eat, the sarco-peptones will be retained, and in a short time improve nutrition to such an extent that the system will demand food. The above preparation can be given for weeks. I have one patient under observation at present who subsists almost entirely on it, and has done so for a few months, and that, too, after all the other extracts and beef preparations had been tried. As he expresses himself, "I get some solid benefit from that stuff." It satisfies the appetite, not only the taste, which plainly indicates that it is a food and not a stimulant. I have observed some good results when given to consumptives, but the number of cases is yet too limited to make any definite statements in this direction.

Dr. Rudisch's peptonized beef cannot be claimed as an absolute and infallible remedy, but it undoubtedly possesses a larger number of good qualities than any other preparation in the market. A great merit of the food is that it can be prepared in a number of ways. It dissolves very readily in boiling water, or it may be added to hot milk. In persons suffering from exhaustion it can be given on toast or stale bread, the patient taking it with a relish, not only for a few times but for weeks in succession. As a rectal aliment it will undoubtedly supercede all other combinations, because the process of digestion has been partially accomplished in the laboratory, and needs only to be assimilated or absorbed.

Case 1. J. M., male, white, married; about thirty-eight years old; nearly six feet high, and showed all evidence of having been a muscular man. He had always been healthy, save severe attacks of gastralgia, annoying him occasionally since he was 18 years of age. During the past three or four years his stomach, as he claims, has annoyed him a great deal. He complains of severe attacks of pain, and frequent and annoying eructation of gases. His appetite is sometimes voracious, and a great deal of water is consumed. The patient is troubled with attacks of vomiting, especially during the night, when large quantities of imperfectly digested food are ejected. It also emits a putrescent odor, and on examination is found to contain sarcinæ and torulæ

*Carpenter's Physiology, 1876. P. 108.
†Therapeutic Gazette, No. 11, 1884.

cerevisiæ. The body weight has diminished very much, from 180 to 140 pounds. In the epigastric region and upper part of the abdomen there is a notable projection extending more or less below the umbilicus. The tumor, upon being percussed, gives a flat sound, palpation elicits a sense of fluctuation, which is quite distinctly felt all over the abdominal wall. The diagnosis, with this array of symptoms, though mistakes have been made in equally well-marked cases, was readily made out to be dilatation of the stomach, due to a constriction of the pyloric extremity of the stomach. The indication for relief in this class of cases is quite marked, since the patient emaciates rapidly, and loses in strength, despite the ingestion of food in quantities large enough to supply the demands of the system, were it properly assimilated. In this case the stomach was enormously dilated, holding very easily two gallons of fluid. The muscular coat becomes attenuated, the pylorus extremity is constricted so as to retain, practically, all the food that is taken, causing fermentation and eructation of gases. Treatment until recent years has not been very satisfactory in this disease, but the aim of the physician should be to furnish to the system what nutrition it demands in such a form to assume little bulk as possible, and then to be of such a nature that it can be assimilated in the stomach, since the lowest portion of the stomach is so low, even though the channel of exit were perfect, that it cannot propel it into the duodemem. In this above-mentioned case the remedies usually recommended. such as rice, gruel, milk, etc., could not be digested. The mucous membrane seemed to have lost all of its properties on account of the great attenuation. Milk when ingested, would be rejected during the night in a curdled condition, and not unfrequently the patient vomited as much as two gallons of liquid and food. In this case the process of washing the stomach out methodically, was resorted to, once in 24 hours, the water being rendered slightly alkaline was allowed to run into the stomach through a long stomach tube, and when full the outer extremity was lowered and the liquid ran out as through a syphon. This was repeated sometimes as high as eight or nine times at one sitting, until the liquid returned perfectly clear. While this plan of treatment was improving the general condition of the patient somewhat, he was practically dying from inanition,for the want of something that his stomach could assimilate. It occurred to me at the time to try "Sarco-Peptones," some of which had been sent me for trial by Parke, Davis & Co., of Detroit.

The extract was ordered, to begin with, in teaspoonful doses repeated three times a day; in a day or two the dose was increased to a tablespoonful. The result was quite flattering, to both physician and patient. He improved in strength; the severe pains from which he had suffered disappeared entirely, and he increased in weight ten pounds during three or four weeks of the above diet. He now commenced taking a little milk and soft-boiled eggs, and other light diet. At last reports he had returned to work again, the abdominal enlargement had markedly disappeared, since there had been no accumulation of fluid during the above course of treatment. All that was required of the stomach was to absorb the food, for it was already digested.

Case 2. This case is of an entirely different nature, and is given to demonstrate the action of peptonized beef where digestion is only temporarily interfered with. John Suddoth, æt. 13, white, has always been healthy; applied at the Good Samaritan Hospital for relief of a severe pain in the eye. He had some months previous been struck in the eye by accident, which set up a severe irido-choroiditis, practically destroying the eye. A short time before his admission to the hospital the second eye became involved through sympathy, causing him a great deal of pain. It was finally concluded to enucleate the injured eye as the only hope of saving the eye secondarily involved. Dr. W. W. Seeley enucleated the eye ball, which was somewhat shrunken and softened, quite readily. The operation did not differ in any particular from the ordinary enucleation, but the bleeding from the somewhat tortuous veins was free, yet not sufficient to cause any alarm. A solution of corrosive sublimate 1:7500, used freely to wash out the cavity, soon arrested all bleeding. Ether had been given to produce anæsthesia, and was tolerated very nicely until the latter part of the operation, when the patient vomited and strained excessively, causing a free flow of blood from the orbit, but again it was arrested by the sublimate solution. The dressing put on was so arranged as to make compression over the eyelids by means of small pledgets of cotton saturated in a solution of boracic acid. He was then taken to the ward, and seemed to be doing quite well during the balance of the day. On the following day there was a slight oozing from the orbital cavity, but not sufficient to cause the slightest apprehension of trouble. On the third day, May 19, the dressing was removed on account of being saturated with blood; and from this on the hemorrhage became so severe that his clothing and the bed-clothes were completely saturated. Ice applied for some time failed to give relief, and hot water was next tried. In the evening I received a telephone message of the boy's condition. On reaching the hospital I found the patient pulseless, the skin covered with a clammy prespiration—in short all the symptoms of exhaustion from the loss of blood, so well marked that when once seen the impression is such that the condition can always be recognized at a glance. The eyelids were swollen and sensitive. I ordered stimulants to be given by the mouth, and ⅙ gr. morphia subcutaneously. Though the eyelids were very painful, ether could not be given for anæsthesia, since the nurse had allowed the blood to flow over the child's face and into his mouth, so that he had swallowed large quantities of it during the day, and upon the slightest irritation he would vomit. I now proceeded to turn out the clot and pack the orbit solidly from the apex up with small pledgets of cotton saturated in a boracic solution, and then made firm compression over the eyelids by means of a bandage. The bleeding now ceased entirely, and in the course of two or three hours the patient's condition improved, but he remained weak for some days, since he could retain nothing in his stomach; retching continued, and for 3 days he was nourished by enema of milk and brandy per rectum. All sorts of extracts had been tried, beef-tea, lime-water, and milk, etc., but the stomach rejected them all. May 22 I ordered the use of Rudisch's extract of peptonized beef in half teaspoonful doses, repeated 4 times a day. Some-

times it was stirred up in hot water or given in milk, and to the astonishment of all, even the first dose was retained, and there was not a single attack of vomiting after that. The patient gained rapidly in strength. In this instance the test was an impartial one, since all other remedies had been tried, and the "sarco-peptones" were given as a dernier ressort. One of the Sisters made the remark that this food, whatever it was, was the first that she had ever known patients to relish and ask for day after day; they did not take it as medicine, but as an article of diet.

From the above history, which is only briefly given in order that the reader can the more readily understand the reason why the food was given, it is fair to presume that the patient would scarcely have recovered had rectal alimentation been the only hope, since he was growing weaker from day to day. I have selected cases, differing as much as possible in their pathological character, for the purpose of showing the extended range of application of a good remedy.

Case 3. This case is one that was reported to me in full by my friend, Dr. Waffenschmidt, who employed the sarco-peptones at my suggestion, when all other means had failed him, as the following history will show: O. T., aged 4, white, of a scrofulous nature, otherwise in fair health; began complaining of pain in the head, loss of appetite, and vomiting, which was followed by a distinct chill and fever. The following day, April 7, I was called to see the child. I found the patient to be of the glandular type, thin, badly nourished, white skin, with a protuberant abdomen, so characteristic in poorly nourished children. The pulse was 160 per minute, with a temperature of 102° F. in the morning; pain in the head and limbs was a conspicuous symptom; loss of appetite, nausea, and a looseness of the bowels made up the clinical history. In the evening the temperature was one degree higher, the face was somewhat flushed, and a dull, stupid expression showed at once the gravity of the disease. The diagnosis was, beyond a doubt, typhoid fever, and while this disease is much more favorable in childhood, the symptoms of the case looked very grave. On second day the temperature was 103° in the morning and 104° in the evening, with pulse corresponding. In the evening there was some epistaxis, and slight delirium and pain in the abdomen were annoying symptoms. April 9 and 10 the symptoms did not change very much; the temperature ran up in step-ladder form one degree higher every day, and about a degree higher in the evening than in the morning, until it had reached 106° F. At this point it remained about stationary for some time, when it came down as it had gone up. The stomach and bowels were quite irritable; opiates had to be given for the relief of pain, and lime-water, pepsine and bismuth, and oxalate of cerium were prescribed with a view to arresting vomiting, but these remedies, together with all antipyretics, were promptly rejected. As a nutriment, milk and lime-water, milk and brandy, arrowroot, rice, barley gruel, etc., were all given a trial in turn, but the result was always the same. April 21, I suggested that the "sarco-peptones" be given a trial in small doses. The first portion, consisting of ½ teaspoonful in about two ounces of hot water, had to be given by force, on account of the disgust for food, but notwithstanding all this, it was retained by the patient. He was now fed regularly on the extract, which was relished after the first dose. The temperature by the 27th day was again normal, and the patient, while weak, was in a fair way to recovery. Light articles of diet, such as milk and soft-boiled eggs, were occasionally added to the extract, with excellent effect. From this time on the child made a rapid recovery, which by the partial judge would have been attributed to the use of the peptonized beef extract. During convalescence there was one attack of vomiting, caused by an imprudence in diet, which was promptly arrested. In the above case the action of a food that is easily assimilated, is quite marked, especially since it is in a subject of the lower classes and broken down, but indications for this remedy, sometimes present themselves in the robust and hearty, as the following brief history will show:

Mr. E. W., aged 22; white; single; iron-worker; has always been healthy. Complained of general malaise for a week and then took to his bed with a chill and fever. Evening temperature 101.5° Fah., pulse corresponding; low muttering delirium, and pain of a severe nature in the head and back. On the following morning the temperature was normal, but by evening it had fallen to 97° Fah., indicating a low form of disease. Pain in the iliac fossa, and tenderness, with all the rational symptoms of typhoid fever, rapidly developed.

The disease run a favorable course, but nausea and a dislike for food generally, was a common complaint. Beef-tea and broths were rejected, therefore I began giving teaspoonful doses of Rudisch's peptonized beef, alternately in hot water and milk, and later on spread on bread, always seasoning properly with salt and pepper. The patient liked this article as a diet, better than any kind of food that could be prepared for him. He continued taking it until he had fully recovered.

I will only report one more case, and it is of an entirely different nature from all the previous cases:

L. J. is a physician 58 years old. Has been in active practice for a term of 25 to 30 years. His health had been failing gradually. He suffered largely with neuralgia and was very dyspeptic, so that his regimen necessarily had to be specially selected for his individual case. In spite of all this he was obliged to retire from active life. His stomach finally became so irritable that he subsisted nearly entirely on milk and the various malt and beef extracts. The malt extracts all had about the same effect; they acted largely as stimulants and not as a food, consequently had to be abandoned. Beef extracts, many of them, proved to be worthless articles, while the better ones, after using them for a short time, caused so much nausea that the smell or sight, yes, even the thought of them, caused disgust. His attention was called to "Sarco peptones," and, like all invalids, he placed all hopes in the article. He commenced using it exclusively, without any other articles of food, nearly always dissolved in hot water, making a kind of broth. Later he has taken it with milk and occasionally spread on a piece of toasted bread. With these additions his bill of fare was complete; he has used it for weeks, and still takes it with a relish. The taste is pleasant, and digestion and assimilation are accomplished so readily that he feels no inconvenience after eating.

In the above instance the observations are valuable, since they are made by an intelligent person on himself under the supervision of a physician. More than that, the test has been a comparative one, beginning with malt extracts, simple and compound "foods" for invalids, of different brands, and ending with the various preparations of beef, in juice, extract, and powder. The dried bullock's blood was rejected on the same grounds that some other valuable preparations had been rejected upon, namely, they were not palatable. In this one particular Dr. Rudisch is to be complimented on his success in manufacturing an article that is not only nutritious, but also can be made pleasant to the taste by careful seasoning. I have only one objection to urge against the preparation, where it has to be used as a food for a long time, and that is its expense. Possibly the great demand that will follow the introduction of this article will have a tendency to reduce the price, so that the poorer classes can have access to it. It undoubtedly has a brilliant future.

Ureometry.

By A. B. Lyons, M. D.,* Detroit, Mich.

Of all the constituents of normal urine, the most characteristic, and, perhaps, from the stand-point of the physiologist and pathologist, the most interesting is urea. This is the final product of the metamorphosis of nitrogenous food, whether this has been converted or not into organized tissue as part of the body. Although it still contains carbon and hydrogen not completely oxidized, the heat producing power of its constituents is practically spent. The organic combustion which results in its production, we may regard as the most perfect possible, and we look upon its formation as proof that the vital processes are going on in the most satisfactory manner as regards economy of force. If in place of urea we find uric acid, we say "something is wrong, here is yet unconsumed fuel—a waste of energy."

Of course the quantity of urea formed when the vital operations are carried on in the normal way, must be directly proportioned to the amount of nitrogen contained in the food, and variation in diet must, therefore, produce a corresponding fluctuation in the quantity of urea excreted. We cannot, therefore, fix any arbitrary standard of the daily amount of urea to be expected, or argue from any observed variation in that amount, taken in and of itself, that vital action is increased or diminished. It is safe, however, to say that if the quantity of urea excreted in twenty-four hours falls below two grains to each pound of the body weight (in adults) there must be either retention of urea, from failure in the kidneys to perform their function, or else there is a diminution of tissue metamorphosis quite inconsistent with a condition of health. With a knowledge of the character and quantity of food consumed by the subject, it becomes possible to obtain from observations of the amount of urea excreted, much valuable information in regard to the manner in which the vital processes are going on, and when organic disease of the kidneys is present, it becomes a matter of the greatest consequence to know whether the urea is eliminated from the blood as rapidly as it is formed.

Thus the occasion often arises for making estimations of the quantity of urea in the urine.

An approximate idea of the proportion of this constituent may be formed from an observation of the specific gravity of the specimens, provided no abnormal constituents are present. In healthy urine the last two figures of the specific gravity may be taken to express very nearly the percentage of urea in parts per thousand. Thus if the density of the specimen be 1.017, we may assume that it contains not far from 1.7 per cent. (17 parts in 1000) of urea.* Unfortunately, in precisely those cases where it is most important to know the proportion of this constituent, in cases, namely, in which the ratio of urea to the other solid constituents of the excretion is disturbed, this method is worse than useless. Its conclusions can be accepted only when supported by some positive evidence of the presence of urea.

A much better method of approximate estimation of urea consists in adding to a drop of the urine on a glass slide, a drop of strong nitric acid, warming a moment to concentrate the fluid, and then watching the process of crystallization of the nitrate of urea. With a little practice one may learn to judge quite accurately of the amount of urea present by observing the rapidity of the crystallization, and the quantity of the crystalline mass. One minim of urine containing two per cent. of urea, if treated with a drop of nitric acid will show no crystals until the volume of the fluid is considerably reduced by evaporation. If simply exposed to the air at the ordinary temperature, it will begin to show a distinct fringe of crystals in 15 or 20 minutes, and, unless the air is very much charged with moisture, will certainly exhibit crystals within 30 minutes. With a four-per-cent. solution of urea, crystals begin to form very soon, and the crystalline deposit is abundant. With a one-per-cent. solution crystals form only as the evaporation is carried nearly to dryness.

If placed in a desiccator over sulphuric acid, tolerable uniformity in the conditions is secured, but such an apparatus is not at the disposal of the physician usually.

Having previously taken the specific gravity of the specimen, we know the maximium amount of urea we can expect to find. If the specific gravity be very low, it is advisable to concentrate the urine before applying the test. The best plan is to bring the urine to a uniform specific gravity of 1.015, either by evaporation or by addition of pure water, before applying the test. Where the specific gravity beads are used this is very easily done. If the density is above the standard, throw into it the bead marked 15, which, of course, will float. Now add water, drop by drop, constantly stirring the mixture until the bead is just ready to sink, the temperature of the fluid being not much above 60° Fah. (15.6° C.). If the density be lower than 1.015, evaporate a little of the urine rapidly to one half or one third its volume, and when

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* Actual observation has shown, for example:

Specific gravity.	Urea.	Observer.
1.0092	.988 %	Millon
1.0116	1.139	"
1.0190	1.858	Boymond
1.0260	2.580	Millon.
1.0277	2.970	"
1.0290	2.719	Boymond.
1.029	3.177	Millon.

cool adjust the specific gravity in the manner just described. The quantity of water added must in each case be noted, to furnish the data for calculating the result.

Suppose that it requires 18 minims of water to bring one fluid drachm of the urine to the standard volume, and that the diluted urine is then judged by the observation to contain about 1.3 per cent of urea. Then $60 : 60 + 18 :: 1.3 : x$, and $x = 1.69$ per cent. In like manner, if two fluid drachms of the urine had been reduced to 70 minims, and then five minims of water added to adjust the urine to the standard specific gravity. the proportion will stand: 120 is to $70 + 5$, as observed percentage is to true percentage.

The necessary apparatus for making the test just described is contained in the vest pocket case for urinary analysis, put up by Parke, Davis & Co., which, however, does not include the nitric acid necessary for completing the test, but this operation is one which will be carried out generally in the office, rather than at the bedside of the patient, for obvious reasons.

Without attempting to obtain close quantitative results by means of it, the physician will often resort to this ready test, to ascertain whether in a given case urea is eliminated as it should be. If the crystalline deposit obtained is scanty and slow in making its appearance, he knows that there is cause for apprehension of danger to his patient.

Oxalic acid may be used in place of nitric acid, but the oxalic acid itself crystallizes as the evaporation proceeds, and this may lead to an erroneous conclusion. For the exact determination of urea, Liebig's process has hitherto been the most popular with physicians, and must continue to hold its place as one of the simplest and best methods yet devised. When a solution of mercuric nitrate is dropped into a specimen of urine a dense white precipitate is formed, which consists partly of mercuric phosphate, partly of a compound of mercuric oxide with urea, ($CON_2 H_4 4Hg O$). If the urine be previously treated with an alkaline solution of barium nitrate to throw down the phosphates, the precipitate produced by mercuric nitrate will consist of the urea compound alone, and the quantity of mercuric nitrate required for complete precipitation of the urea is a measure of the quantity of that compound present.

To carry out the estimation two test solutions are required:

1st. A baryta solution, consisting of a mixture of one volume of a cold saturated solution of barium nitrate with two volumes of a cold saturated solution of barium hydrate (crystals).

2. A standard solution of mercuric nitrate, 1 c.c. of which is equivalent to 10 milligrams of urea, (if minim measures are used this may be made of such a strength that 100 minims shall represent one grain of urea).

To prepare this standard solution weigh out 77.2 grams (or 592.9 grains) pure dry mercuric oxide, in the smallest possible quantity of pure nitric acid, by the aid of heat, the acid being previously diluted with twice its volume of water. The quantity of acid (sp. gr. 1.40) required will be about 46 c. c. (or 360 minims). Nearly the whole of this quantity may be added at once, and when this has become completely saturated, more of the acid is added, a few drops at a time; until the oxide is completely dissolved. The acid solution is then evaporated on a water bath to a syrupy consistency and then diluted with water, to make somewhat less than one litre (or one pint). A precipitate of basic salt will be thrown down in the dilution, which must be allowed to subside, the clear fluid decanted, and the precipitate dissolved by the addition of a few drops of nitric acid, and the solution added to the clear liquid. The volume is then made up exactly to one litre (one pint). The figures given in parenthesis will produce a standard solution (No. 2) of which 100 minims represent one grain of urea; of the other solution (No. 1) 1 c. c. is equivalent to 10 milligrams of urea.

To make the estimation, put into a beaker 40 c.c. (one fluid ounce) of the urine to be tested, and 20 c.c. (half a fluid ounce) of the baryta solution. Filter through a dry filter, and of the clear filtrate take for experiment 15 c. c., equivalent to 10 c. c. of the urine. Into this the standard mercuric solution (No. 1) is allowed to flow, drop by drop, from a burette, until the whole of the urea is precipitated. The end of the reaction is ascertained by testing a drop of the mixture with a saturated solution of sodium carbonate, which, as soon as the reagent is present in any excess, will give a yellow color. Drops of the carbonate of soda solution may be conveniently arranged in a series on a white surface, *e. g.*, a common china plate, and after each addition of 1 c. c. of the reagent, a drop of the mixture may be added to one of these drops of the indicator. As soon as a yellow color is produced, the amount of standard solution that has been added is read off on the burette; 2 c. c. must be deducted as an arbitrary (average) correction for chlorides, and the remainder divided by ten gives at once the percentage of urea.

Thus, supposing the urine to have a specific gravity of 1.022. We may add at once 15 c. c. of the reagent, and then 1 c. c. at a time until our indicator shows a yellow color. This takes place, we find, when 26 c. c. of the standard solution has been used. Deducting 2 c. c., we have 24 c. c. equivalent to 2.4 per cent. urea.

With the apparatus of the pocket-case above spoken of, the estimation may be made in the following manner:

Use for the test 150 minims of the filtered mixture of urine with the baryta solution. Add the reagent (No. 2) from the graduated pipette, at first freely, finally five minims at a time, until the end reaction with sodium carbonate is obtained, as just described. From the amount of test solution added, subtract 20, and divide the remainder by 100 to obtain the percentage of urea. In place of the solution of sodium carbonate, a bit of one of the sodium carbonate test-papers may be employed for the indicator.

If the physician is provided with the requisite apparatus and the standard solutions, Liebig's process may be carried out in a few minutes with results which, however subject to correction, are for practical purposes quite satisfactory. The solutions required are, however, troublesome to prepare, and on this account alone many physicians have been deterred from availing themselves of this test. In reality the method is one which involves many sources of error, and its results are at best only approximate.

Of the various plans that have been proposed for the more exact determination of urea, those depending on the decomposition of that compound by an alkaline solution of chlorine or bromine, are the most

worthy of confidence. Under the name of the hypobromite or hypochlorite process, this has been rendered available for physicians by the devising of simple forms of apparatus for applying it, or by the doing away altogether with the use of apparatus in connection with it. Urea is decomposed by an alkaline solution of chlorine or bromine with effervescence, nitrogen and carbonic anhydride escaping. The reaction is expressed by the equation,

$(CH_4 N_2O + 3Na Cl O = 3Na Cl + CO_2 + N_2 + 2H_2 O.)$

If the solution contains excess of alkali, the carbonic acid is taken up, and the nitrogen alone escapes in gaseous form; by collecting and measuring this, we may determine the quantity of urea in the solution.

Instead of collecting the gas and measuring it, we may observe the loss in density sustained on account of the decomposition of the urea. This is the basis of the method of Dr. G. B. Fowler (N. Y. Medical Journal, July 1877), which commends itself as at once simple and practical. Dr. Fowler mixes one volume of the urine to be examined, the specific gravity of which at the standard temperature (60° Fah.) has been previously accurately determined, with exactly seven volumes of a solution of sodium hypochlorite—the liquor sodæ chloratæ of the Pharmacopœia, the specific gravity of which is known. In case the quantity of urea is excessively large, the urine must be diluted with an equal volume of water, before testing, the result being of course multiplied in that case by two.

Immediately on mixing the fluids, effervescence takes place, but the decomposition of the urea is not instantaneous, and it is best to allow two hours to elapse before the reaction is considered to be at an end. The escape of gas is promoted by occasional shaking of the bottle or jar containing the mixture. At the end of two hours, bring the mixture to the standard temperature and determine carefully its specific gravity.

Calculate now the specific gravity of the mixture of urine and hypochlorite solution, previous to the reaction, by multiplying the specific gravity of the latter by seven, adding the specific gravity of the former and dividing the sum by eight. From this quotient subtract the observed specific gravity of the mixture after reaction, and multiply this difference by 0.77 to obtain the percentage of urea. The factor 0.77 was determined by observation. An example will make these directions more intelligible: Suppose the specific gravity of the urine is 1.018, that of the hypochlorite solution 1.044, and of the mixture after the reaction is complete, 1.038. The calculated specific gravity of the mixture before reaction will be

$$\frac{1044 \times 7 + 1018}{8} = 1.0408$$

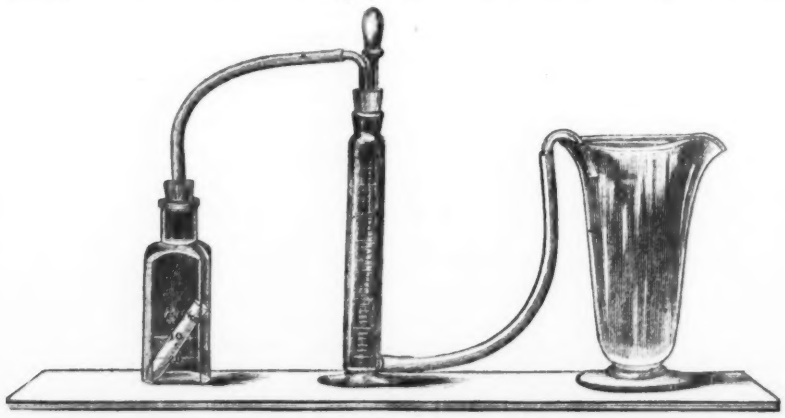
1040.8—1038 = 2.8, and 2.8x.77 = 2.156, the percentage of urea.

Simple as is this plan in principle, it requires close attention to details in order to obtain with it results even approximately close. The determinations of specific gravity must be made strictly at the standard temperature, and with instruments sufficiently accurate to give correct figures in the fourth decimal place. The ordinary urinometer scarcely permits readings accurate enough to render the results of the determination of any value. With a pycnometer and a good analytical balance, one can make satisfactory determinations, but these requisites are more expensive and difficult to procure than the especially devised apparatus to be described later.

There remains the method commonly known as the hypobromite process in its original form, viz., that in which the amount of urea is calculated from the volume of nitrogen generated in its decomposition.

It is not necessary to allude to the various forms of apparatus that have been devised to facilitate this analytical process. The collecting and measuring of a gas is an operation somewhat troublesome to manage, unless by the aid of apparatus especially contrived for this purpose. Dr. Squibb after describing a somewhat elaborate form of apparatus, concludes that it is easier to measure the gas by an indirect method, by causing it to displace a fluid like water which can be readily and accurately measured. His ureometer is convenient and inexpensive. It consists of two four-ounce square bottles, one for the decomposition of the urea, the other to receive the gas, which is measured by the amount of water it displaces. The water is received in a graduate, or is otherwise measured, and the quantity of urea calculated, each cubic centimeter of nitrogen representing 2.7 milligrams of urea. (In English weights and measures one cu. inch of nitrogen represents 0.683 grain of urea, or one fluid ounce of gas represents 1.233 of urea.)

There seems to be no particular advantage in the indirect method of measuring the gas, if only a convenient receiver is provided for collecting it, and if this is so graduated that the volume of gas is read of at once in percentages of urea, we shall have an instrument which deserves the name of ureometer. Such a receiver the writer has recently devised, and the firm of Parke, Davis & Co., with characteristic enterprise, have already brought it within the reach of physicians, offering the apparatus complete at the very reasonable price of one dollar. The accompanying cut illustrates the apparatus set up for use.



It consists of

1. A bottle, provided with perforated rubber cork and delivery tube; in this the decomposition of the urea is effected.

2. A small test-tube to contain the urine, graduated to hold 4 C. c., the quantity employed in each experiment.

3. A graduated jar for measuring the gas evolved. This jar is provided with an over flow tube, and a vent tube closed by a rubber cap, to secure accurate adjustment of the level of the fluid in the jar at the commencement of the experiment.

The process is as follows: Put into the bottle 40 C. c. (11 fluid drachms) of solution of chlorinated soda, U. S. P. (or 20 C. c, = 5½ fluid drachms, of a solution of sodium hypobromite). Fill the test-tube exactly to the mark (4 C. c.) with the urine to be examined, and lower it into the bottle by means of a thread, or by the aid of a pair of slender forceps, taking care that none of its contents are spilled in the operation. Fill the graduated jar with water (which must be of the same temperature as that of the air in the room) to a point above 0° of the scale, the overflow tube being held by the rubber band about the neck of the jar so that no water shall escape. Remove the rubber cap from the vent-tube and connect the apparatus, pressing in the rubber corks so as to make the joints air tight. Now lower the end of the overflow tube, allowing water to escape until the level of the fluid is brought nearly to 0°. Put the cap on the vent tube, and press the tube further through the cork, if necessary, so as to bring the level of the fluid exactly to 0°, the open end of the overflow pipe being kept on the same level. Now make sure that the joints of the apparatus are tight by lowering the end of the overflow tube several inches. A few drops of water will escape at first, from diminution of pressure, but if the joints are perfect there will be no further dropping. If there is any leakage, the defective point must be found, and the difficulty corrected before proceeding further with the experiment. Having made sure that the connections are perfect, catch the end of the overflow tube over the edge of a graduate or of any convenient receiver (*e. g.* a common bottle) as shown in the illustration. Now, by canting the first bottle, cause the urine to flow out of the test tube and mix with the hypochlorite solution. Effervescence at once begins, but the complete decomposition of the urea requires some minutes. The bottle must be occasionally shaken to promote the escape of gas, and care must be taken that the whole of the urine is mixed with the hypochlorite solution. If much heat is developed in the reaction, as is always the case when the hypobromite solution is employed, the graduate must be filled with water as soon as the action moderates, so that the orifice of the overflow tube may be immersed. This is in order that when the expanded gas cools and condenses again in volume, the tube may remain filledwith water. At the end of half an hour, if after shaking the bottle no further increase in the volume of the gas collected is observed, the experiment is concluded. To read off the result, lower the end of the overflow tube until it is exactly on a level with the fluid in the graduated jar, and read off on the scale the percentage of urea contained in the urine.

If the solution of sodium hypobromite is preferred by the physician to the officinal solution of chlorinated soda, it must be prepared fresh, shortly before it is used. The solution is made by dissolving in 35 parts of water 10 parts of caustic soda, allowing this solution to stand a day or two, and decanting the clear portion, which is to be kept on hand. When an estimation is to be made, mix 24 volumes of this solution with one of bromine, and use of the mixture, when cooled to the temperature of the room, 20 c c (5½ fluidrachms).

The temperature of the room in which the experiment is conducted is assumed to be about 70° F. (21°C) To obtain exact results, the actual temperature should be observed, as also the height of the barometer, and the appropriate corrections made, but if results so accurate as this are sought, the urine itself must be more exactly measured than is possible by the graduated tube. The appropriate correction for 1° F. is about 0.23% of the reading of the instrument (for 1° C. about 0.5%). For 1 in. barometer, 3.4% (for 1 millimeter 0.14%). Thus suppose the temperature to be 86° F. (30 C). Barometer 29.7 in (754.4 mm), and the reading of the ureometer 2.15%. The temperature correction will be for 16° F. (9° C). 16× .28 (9×0.5) = 4.48% of 2.15 = 0.096 which must be subtracted since the effect of heat is to expand the gas. The correction for barometric pressure for 0.3 in. (7.5 Mm), is 3.4×0.3 (0.14×7.5) = 1.02% of 2.15 =0.022 to be subtracted also. The corrected result will, therefore, be 2.15—0.096—0.022=2.032. Obviously, for clinical purposes, the correction, even in an extreme case as that instanced, is of no practical importance.

In fact it has been discussed here purposely to show of how little consequence it really is to the physician. At the same time it is, of course, best to operate in a room where the temperature does not vary very greatly from the standard.

In some rare cases it will happen that the urine contains a larger amount of urea than the ureometer is capable of indicating. When the specific gravity of the urine exceeds 1.030, if sugar is absent, it will be best to use only two cubic centimeters of the urine for the test. Mix a portion of the urine with an equal volume of water, the quantities being each accurately measured, and of this mixture take 4 c c as usual for the experiment. The result must of course be multiplied by two.

The points of superiority in this ureometer over any hitherto devised, are:

1. The results are read off directly in percentages of urea, so that troublesome calculations are wholly avoided.

2. Adjustment of pressure is made with the greatest facility by means of the flexible overflow tube, so that exact results are secured in the readings with no trouble whatever.

3. A simple and ready means of adjusting the level of fluid in the graduated cylinder is provided iu the vent tube.

4. Finally, all the adjustments required to obtain correct results, are made by such simple devices that no practice or skill in chemical manipulation is required in the use of the instrument. It will be found in practice that an estimation of urea by this instrument consumes very little time, and that the results are, for all practical purposes, as accurate as could be wished.

Who is a Therapeutist?*

By Frank A. Ramsey, M. D., Knoxville, Tenn.

ONE of the discussions that was had at the last session of this society, held May 1st, 1884, has given occasion to this paper.

The discussion prompted a reference to a dictionary for a definition of therapeutist.

The definition was found, and the reading of it suggested the question, "how many practitioners of medicine are therapeutists?"

The language of Robley Dunglison ought to be read, and pondered, by all who attempt effort against disease. It is here reproduced. Listen to it: "To be a good therapeutist, a man must be well versed in every department of medicine, and be capable of observing and reasoning well. He may be a good *observer* and *reason* well. He may be a capable *observer*, and yet a bad *reasoner*. He cannot practice well unless he is both. Hence the comparative small number of good therapeutists."

Is there any idea conveyed by the language except that there is an exceedingly less number of capable practitioners of medicine, than there are of medical doctors, including those who are diplomaed, the charlatans, quacks, mountebanks, apothecaries, and all?

If this is true, is not a verse, that has been thrown into the face of doctors until it has become common, proper to be considered by them?

> "See, one physician, like a sculler plies,
> The patient lingers and by inches dies,
> But two physicians, like a pair of oars,
> Waft him more swiftly to the Stygian shores."

It is probable that Macbeth was familiar with the sentiment of the verse when he, energetically, said: "Throw physic to the dogs;—I'll none of it." There is another character in the book of players who says: "Trust not the physician; his antidotes are poison, and he slays more than you rob." What has been, is! Thus has tribute been paid to the practitioners of medicine. The same kind is given every day! Who is responsible for the left-hand compliments given to practitioners of medicine dwelling here, in the midst of people who, certainly, are of good business intelligence, yet who eschew home skill to employ any advertising proposer for their money,—perchance their confidence,—who comes to the municipality? Or, is it because this people have failed to find a capable therapeutist amongst those who reside amongst them as custodians of their health, or curators of them when in disease? Or, are the elite of medical practitioners of this city, who are of us, and amongst us:

> "Modern Pothecaries, taught the art
> By doctor's bills to play the doctor's part;
> Bold in the practice of mistaken rules,
> Prescribe, apply, and call their masters fools?"

There is, though, another side! There have been wise men in this world! Men who were profound when considering deportment and services, and who, in estimating others, judged justly. They were, essentially, philosophers. In their midst, contributing, more largely than any, to the whiteness in the literary skies caused by the resplendence of intellectual stars, is Voltaire. Hear his words. Be consoled by them! "Nothing is more estimable than a physician, who, having studied nature from his youth, knows the properties of the human body, the diseases which assail it, the remedies which will benefit it, exercises his art with caution, and pays equal attention to the rich and the poor." These are the opinions, adverse and favorable, of men who studied, not medicine, but medical practitioners. Ought not such opinions to impress each medical man with the importance of self-examination relative to his own capabilities as an observer and a reasoner? Ought they not to occasion each practitioner of medicine to feel it his duty to obtain by observation, difficult as it is, "a chain of rigorously obtained proofs," when an individual presents however seemingly trivial the basis on which he makes complaint, whose economy is in disorder, to ascertain whether, indeed, the organism is, in any part, diseased? Ought they not to stimulate each one to study the direct, the consequential, incidental, and casual effects of a medicament, or of medicaments in combination? Are not such opinions, that have been expressed by men who have not delved in the cycle of medical study, yet have been intimately in contact with men who practiced medicine--are these opinions not enough to cause each practitioner of to-day, by inquiry, to demonstrate to himself, whether he is, or is not, in truth, a good therapeutist?

Who is a good therapeutist? Is it the one who has been a familiar in dissection rooms, and can demonstrate bone, sinew, muscle, nerve, cartilage, veins and arteries? Is it the one who has served apprenticeship to a chemist, and who can himself give the rationale of the union, and incompatibles of substances, gaseous, liquid and solid? These are attainments when possessed; yet, even then they, as sciences, are inadequate to the formation of a good therapeutist. All are familiar with the advent of Dr. Sloane into London, with letters of commendation to the immortal, though very much abused Sydenham. In the letters, Sloane's qualifications were represented to be perfection in anatomy, botany, and the various branches of medicine. Sydenham read the letters, and spoke to the bearer: "Sir, this is all very fine on paper, — very fine; but it won't do. Anatomy! Botany! Nonsense! Why, sir, I know an old woman in Covent Garden, who better understands botany; and, as for anatomy, no doubt my butcher can dissect a joint quite as well. No, no, young man, this is all stuff. You must go to the bedside; it is only there you can learn disease." Anatomist! Botanist! Chemist! "*Sine cortice, nave;*" thus may they assume, yet are they not, indeed, in need of the assistance acquired only by observing phenomena, and the attaining of habits of reasoning, by no means depending on their knowledge of the fixed mechanical positions of organs, and tissues, of the defined characteristics of a generic classification, or the synthetical and analytical combinations and separations of atoms? Do they not stand in need of observation and reason? Or, is a good therapeutist one who prescribes a purging agent to be taken by a patient, who has had no dejection for many days, without regard to any other discoverable, yet not patent, fact

* A paper read before the Knox County, Tennessee, Medical Society, May 8th, 1884, and ordered to be published.—Samuel B. Boyd, M. D., Chairman of the Committee of Publication.

connected with the person, and without essential consideration of any other effect than a purgative one from the agent? Or, is one a good therapeutist who wants the authority of any other one man? Is the one who goes to Wood, as authority, and then goes to a patient who is tympanitic, and, dogmatically, declares the affection to be typhoid fever, to be relied on as one who observes, or as one who reads? Can he be said to be a therapeutist? If any one developed fact is asserted by a doctor in a published article to be pathognomonic, does any one relying on it prove himself to be either an observer or a reasoner? Or, is there, in the deference, any mark of the elements pertaining to a good therapeutist? If the authority appealed to for diagnosis happened to be correct, where is the power as a prescriber, given to the disciple? Where would he go, in the absence of observation and reason in his own personal capability, for proof of his character as a good therapeutist? Would he, in full faith, yet, as to others, blindly, appeal to authority? Is he a good therapeutist who, uniformly, gives a medicinal agent?

There is a practitioner of medicine, sacerdotal and otherwise, within the bounds of recognition here by more than one, who gives a medicinal agent to an adult in consumption, or a child in whooping-cough, to a woman in hysterics, or a man with syphilis;—gives it without regard to age of patient, without regard to knowledge of the essential condition of a patient's organism, or of the direct nor remote effects from the agent he employs. Is he a therapeutist? Yet it is known to several members of this society that sick persons who were, at one time, their patients, have got well under the particular man's treatment. Was not the fault, so far as the dignity of the profession of medicine is concerned, in the hands of educated doctors, who failed, somehow, to be therapeutists? The man prescribed his medicines because he was a doctor; he prescribes boldly, fearlessly, because he is a doctor, and earth will cover any of his deficiencies, as it will that of other doctors. The "get wells" are ascribed to his skill. Yet is he a therapeutist?

There lived in this county a Dr. Wells, in every particular a worthy man, except that he played as doctor. He bought from the drug store Smith's Tonic by the gross, and transferred the contents to other vials that he himself dispensed. It was his only medicament. He did a practice that at this day would be called good. He died and was honorably buried, leaving heirs who enjoy the results, in property, of his perquisites on Smith's Tonic. Would any one say he was a therapeutist? He bought his medicament from a capable and popular doctor, James Morrow, to whom he was accustomed to tell histories of his cases. One time Dr. Morrow gave to Dr. Wells a blister plaster, with the direction to put it over the abdomen. Weeks passed; then Dr. Morrow had opportunity to ask how the blister acted. The reply of Dr. Wells was definite: "Very well upon the *ab*, but on the *dough-men* not at all." He had put the plaster across, over the glutei, where it had been effective, whilst the alvine molded debris, estopped from escape by the plaster, remained as passive to impression as its nature demanded.

How many who practice medicine are as ignorant of the demeanor of a medicinal agent as Dr. Wells was of the organization of the human system? Won't the variance of opinion spread before the members of this society answer the question?

When, and at what time, is quinine proper in the treatment of typhoid fever? Renauld tells us that at this day "medicine is a science which has for its aim the promotion of health and the cure of disease." If medicine is a science, why, oh! why, so much variance of opinion amongst medical practitioners, belonging to this society, regarding the appropriateness of quinine in typhoid fever?

One has observed that heavy doses are followed by a declension of temperature. No one, here or elsewhere, can deny the correctness of the one-asserted observed fact; yet, are there not other effects that observation has, already, shown to be pernicious beyond the salutary reduction of temperature? Another, a doctor who has been largely in contact with typhoid fever, declared his use of quinine in the affection to have been so deleterious as to have made him determine not to permit the use of the agent in any instance of the fever of which he had controlling charge. Another, as old, perhaps older, in practice, had the same opinion, that quinine is not an appropriate medicament in typhoid fever.

One physician mentioned that quinine sometimes occasions, or its administration is followed by, a membranous dejection, or an epithelial exfoliation of the mucous membrane of the rectum. This statement was confirmed by another practitioner of medicine; others had seen nothing of such sequences. Were the affirmants wrong in observation, or had others not observed? Where does the difficulty come in? Certainly not in the operation on the organism, of quinine! Are not medical men, when administering quinine, looking only to its antiperiodic and antifebrile energy, and nothing more? How long has it been since a member of this society told us that an old, old drug possessed a particular property, and was laughed at for the declaration? How many have since had to acknowledge that ipecac has an effect and an appropriate application as a parturifacient, that its many years of use had not revealed to them.

Quinine has more energy than its antiperiodic and antifebrile influence. The most miserable death that ever occurred was that of Capt. Monsorat, at Memphis, Tenn., occasioned by a protracted use of quinine. If so, why not study all consequential and sequential effects of the agent?

In the discussion, in the session of May 1st, a practitioner of medicine, who had been many years acquiring what he said, adjudged others who used quinine as a tonic, as laboring under a mistake. All the same, he was taken to task; certainly showing that there was fault in observation, or that reasoning in the premises was wrong in some one of the participants in the discussion.

Who gives study to the difference in action of jalap, rhubarb, and epsom salts? Where is the practitioner of medicine who has endeavored to have an idea of the want of sameness in action, of decotion of senna or manna and sheep-saffron tea? Who has elucidated where aloes act, or when extract of cascara sagrada would be more appropriate?

It has been many years since the sage of Cos enunciated a fact that is as patent now as then, that observation is difficult. It is so in street and country

life, and much more so to those who assume to cope with

"Diseases desperate grown."

When in contact with them there ought to be in the bosom of the administrator of the agents employed on a doctor's order a constant realization that

"All human things
Of dearest value, hang on slender strings."

How Can Physicians Aid in Elevating the Profession of Pharmacy?

By Robert Meade Smith, M. D., Professor of Comparative Physiology, University of Pennsylvania.

I HAVE been much interested in a paper with the above title, read by Dr. F. E. Stewart, before the Philadelphia County Medical Society, at its meeting held June 25th, and while I thoroughly sympathize with its author in his attempt to advance the standing of pharmacy as a profession, I think that he overestimates the share which the medical profession can or should have, in aiding to accomplish this very desirable end. As far as I can see, it rests solely with the druggists to elevate their calling into a scientific profession, it being understood that conscientious attempts at improving the status of pharmacy cannot fail to meet with recognition and appreciation at the hands of medical men.

So long as druggists are mere middle men, contributing nothing to knowledge, but merely supplying a demand, pharmacy can never be anything but a trade.

Both the medical men and druggists clearly understand what is needed to rectify the faults in this matter. As long as druggists have for their sole business the filling of medical orders, which, it must be added, they often supplement by clandestine and illegal prescribing of remedies, and by the sale of nostrums and proprietary medicines, of whose composition and properties they are entirely ignorant, they can be nothing but mere tradesmen, and have not the slightest claim for recognition as scientists. But the retailing of drugs on physicians' orders is a perfectly legitimate business, and those druggists who keep only the best materials and prepare them in the best manner, are only acting up to a recognized business policy, that uniform excellence and integrity in their business method cannot fail to prove remunerative in the long run.

But further, there is, intrinsically, no impossibility or incongruity in the combination in one individual of the art of pharmacy and the science upon which it is based, any more than there is in the union of any business and science. But the adoption of a platform and the christening of them "pharmacologists" will not make druggists scientific. What is wanted is evidence of scientific attainments by the persons in question, and pharmacy is as capable of scientific study as is medicine.

No one will claim that all physicians are scientists. But too many are mere therapeutic machines, applying by rote ,in their practice, standard medicines to given diseases. To be recognized as scientific men physicians must do scientific work, and, as far as I can see, the position of the pharmacist is practically a similar one, with the reservation that the degree of doctor of medicine presupposes scientific attainments and feeling, which, in the majority of cases are far from existing, while druggists are not so handicapped.

All, therefore, that is needed is for druggists, whether retail, wholesale or manufacturing, to do scientific work in the free publication of original research, whose aim should be the advancement of the science of pharmacy and the improvement of the arts which rest upon it. They will then soon enough acquire a reputation as scientific men and capable pharmacists, and the better the reputation they acquire as such, the more must it advance their business interests.

It has been said that scientific work by druggists will not be believed in, but will be regarded as mere advertising schemes for business purposes. Is the position not precisely the same in the medical profession? Are not the majority of contributions to medical literature mere bids for practice, and is not such advertisement perfectly legitimate? A physician, who, by his writing or any manner shows to his professional brethren his perfect mastery and knowledge of the subject, can naturally expect that the recognition of his attainments will prove materially profitable. But while such contributions to the medical press are perfectly proper, it is hardly necessary to say that allowing reports of cases, etc., to appear in the lay press, by which the ignorance of the lay public is alone appealed to, lowers the physician to the level of the manufacturer and puffer of proprietary medicines.

So also the publications of pharmacists, to be legitimate, must record advances and improvements in pharmaceutical matters, and their aim should be the furnishing of information which should be perfectly accessible to their fellow professional men, and should enable them to profit by their discoveries, while the discoverers must find their return in their increased reputation and in the business resulting from that reputation. On the other hand, the partial publication of pharmaceutical processes, or the announcement of the ingredients of pharmaceutical compounds, without the full information which would enable any druggist to reproduce such preparations, is a trade advertisement of the worst kind, because it attempts at creating the impression of scientific frankness.

Finally, there is another very important matter referred to by Dr. Stewart, which is well deserving of attention. I mean the method to be pursued in the introduction of new drugs. There is no doubt that the pharmacist cannot, and should not, be held responsible for the therapeutic properties of the article which he supplies on the demand of physicians, and where such a demand exists, he is perfectly warranted in filling that demand, without thought as to whether the drug fill the therapeutic indications recognized by the physician or not. But it does not follow from this that ignorance on the part of the pharmacist, as to the toxic properties of the drug, is excusable, or that he is warranted in supplying nostrums and patent medicines. In the first place, while not presuming to criticize the therapeutic application of the physician's orders, he should be able, from his more intimate knowledge of drugs, to act as a check on the physician, and prevent the administration, through carelessness or ignorance, of over-doses.

In the second place, I cannot believe that Dr. Stewart is correct in attributing to physicians such an extensive demand for quack medicines, if he is correct, there can be no doubt that druggists would be perfectly justified in refusing to fill such orders, and I am quite certain that such a refusal would not hurt their business interests.

I have, however, been led from the main point, as to the introduction of new drugs. When a new drug has been recommended by a member of the medical profession, a demand is at once created, and any houses are perfectly justified in at once filling that demand. But I believe that it is a duty which both physician and druggist owe to the public, to assist one another in the determination of the proper value of that drug. From their very nature the large manufacturing drug houses are admirably situated for the investigation of the chemistry, etc., of drugs, and it is to them that we naturally look for the determination of the best form of that drug if it prove to have any value. But I also believe that the large drug houses should assist in determining whether the new article possesses the virtues claimed for it or not, and that such a policy would also prove largely remunerative in a business sense. It is well known that there are fashions in therapeutics, as in everything else, and that the medical profession, like everybody else from the time of the Athenians, has been running "after some new thing." When, therefore, a new drug is heralded as something remarkable, there can be no one, in a business sense, more interested in settling the exact position of that article than the manufacturing phamacists. For if it is to prove worthless, they wish to avoid being loaded with a stock for which the demand will rapidly cease; while, if valuable, they are interested in knowing that as soon as possible. Here is, therefore, the way in which druggists can do scientific work, and the way in which that scientific work may prove remunerative, whi'e physicians may help in advancing the status of pharmacy by encouraging such *bona fide* scientific work, and the large business of the houses which pursue this policy proves that such is the case.

The Neutral Treatment in Fevers.

BY DR. L. L. HOLCOMBE, TERREBONNE STATION, LA.

AFTER a long experience and observation in the treatment of fevers of all grades and characters, I have found, as an almost invariable thing, a strictly neutral system to be the best. This idea was first suggested to me years since, when I was a student of medicine. My reading taught me that there are few medicines of the materia medica which have maintained a lasting reputation for the cure of fevers, that are not alkalies or alkaloids; *e. g.*, the cinchona alkaloids, gelsemium, arsenic, the neutral salts, etc., etc. These are powerful antipyretics, as everybody knows. Now, why so? They act by neutralizing the alimentary canal. They destroy zymotic fermentation by their neutralizing powers simply. In fact, most medicines that are supposed to possess antipyretic powers are peculiarly destructive to fermentation.

In short, our theory of fever is, in reality, based upon the now generally accepted belief that organic germs, which originate in fermentative processes, propagated by natural cultivations in the *prima viæ* and in the circulating juices of the system, are the prime causes of fevers of every description and class. The great genius of Broussais, Brown, and Rasori lit the first sparks that have thrown a refulgent light upon the causes of fever. Upon their theories and notions (be it admitted or not) many of our views of fever and its causes are now based. But as we are not presuming to write a commentary, we will strictly confine ourselves to the subject heading of this article.

Acids of every class and description are prejudicial in fever. Though antipyretic in a sense, on account of their destructive effect upon the lower forms of organic animal and vegetable life, in fevers, and particularly the vegetable acids, they but add to the oxidizing processes that are prevailing in the system. To demonstrate our views forcibly to the mind of any practising physician, let him select from his fever patients a marked case; one in whom the thermometer marks a high figure; one in whom the pulse indicates the most marked features of febrile excitement, and throw aside in his repertory of drugs and diet, everything of an acid nature. All sweets and any luscious food, or other kinds of nutriment tending to acidity or fermentation, be laid aside. Let a milk diet be ordered exclusively, and begin with that wonderful antipyretic, bicarbonate of soda, which is harmless for evil, but acts like magic for good. Give it in heroic doses until you have, as it were, saturated your patient. Temperature will then fall, heat abate, the skin will act, the bowels will move, urine will become bland, the bile will flow, absorption will be reinforced, assimilation will slowly but surely begin to take place; the headache and other distressing symptoms will have passed away—and the patient will now speedily recover. As nature abhors a vacuum, so does disease, or at least fever, abhor neutrality.

In our plan of treatment we accomplish the following indications, and, in fact, what more is to be desired: Exosmosis throughout the system is re-established, congestions are relieved, germ life or fermentive processes are annihilated, irritation removed, and heat dissipated. These are merely the results of acknowledged chemical and physiological action, and they can be nowhere more beautifully demonstrated than in the living organism. Under our system of treatment we have a thousand times witnessed the most wonderful and gratifying results. We may be told, why not use salts of a refrigerative nature, in combination with the vegetable acids, etc? The acids of these preparations are assimilated, we are told, and the remaining alkali neutralizes the system all the same. This may be true, but we prefer a more positive means of neutralizing the system. We prefer the simpler bi-carbonate of soda, a remedy always at hand, and with anything like moderation, as harmless as wheat flour.

We may be charged with enthusiasm or perhaps insanity; these we admit are very near relations, but let any physician try my plan for even the short time of forty-eight hours, and he will see things perhaps, never before dreamt of in his philosophy.

In the treatment if we find the secretions from the skin reeking with the feverish smell, with the odors, as we may say of the swill-tub or the vinegar-manufactory, we add to the treatment affusion or

sponging with tepid water, containing a large proportion of soda. In fact, the skin, and particularly in the crotches of the arms and thighs, should be well washed, as it were, in the soda solution. This may be made in the proportion of a pound of the bicarbonate to about four or five gallons of water.

In introducing the soda into the system as we propose, we do not, to speak plainly, introduce there a foreign substance, but a something that is natural to it, something that the organism craves, something that is essential to animal life as the blood itself. Most of the remedies of the fever state are poisons, which, as we believe, in no way accomplish the cure but by checking septic or malarial fermentation, or in other words, malarial germ growth. Here their efficacy stops; but with the soda it is different. It follows up the retreating disease, and like a gallant and successful conqueror presses on the fleeing and demoralized cohorts, and thus progressing drives even the scattering guerillas of the fell arm, from its own bushes and fastnesses.

Mind, the principle is to saturate, as it were. A half-way plan is like most half-way plans in this life; it is well enough as far as it goes, but it does not go far enough. We use the following formula:

℞ Bicarb. sod. ʒss to ʒj.
Fld. ext. gelsemium ʒj.
Spits. nit. ether, ʒss.
Ginger ess. ʒss,
Peppermint water, ʒvijss.

M. Sig. Table-spoonful in half tumbler of water every two or three hours.

In our treatment we avoid all sweets and sours. After convalescence is established quinia and the mineral acids serves as tonics. But the scrupulous avoidance of every species of vegetable acids and fruits of all kinds are strictly enjoined till health is in every way established. Should the soda operate on the bowels through its combinations with the acids and effete matters in the bowels, this may be stopped by adding to the formula above a drachm of deodorized tincture of opium. In truth this will be a good addition, as a common thing, to the formula, by which existing irritation is calmed and sleeplessness and delirium avoided.

In fine, we do not flatter ourself we have made a discovery, as many physicians who are successful in the treatment of fever use something of a neutralizing treatment; but they, to a certain extent, are inconsistent by using other things which more or less counteract the effect of their neutralizing plan. In spite of all the quinia, etc., you allow your patient the indulgence of his morbid cravings for acids, sweets, etc., and you find him an obstinate case, who will require that you try and try again until, failure and on top of failure, will ere long disgust both him and you, and you will perhaps mutually console yourselves as did Honest Slender in his relations with Mrs. Anne Page: "that there was no great love between you in the beginning, and it pleased heaven to increase it on further acquaintance."

In a word, I have during my whole course of reading, particularly noticed the effects which have followed neutralizing influences in the treatment of disease. Here we have seen its calming influences in infantile diseases. We have seen the most alarming chronic stages of colliquative diseases of the bowels and stomach gradually mend their way to final recovery. *Per contra*, how often have we seen and fully appreciated the disastrous effects of a treatment with acids, and particularly of the vegetable kind, conjoined with a diet rank with fermentation and *septic* materials.

In conclusion we would request that physicians will take but a moment's heed of our suggestions and give our plan a trial and carefully report the comparative results. The medical world is now great on anti-septics, germicides, anti-zymotics, disinfectants, etc., etc. Let them lay down this cumbrous *armamentarium*, in the treatment of fevers especially, or, better, let them be used as a secondary means in the treatment; then, mark my word for it, there will be inaugurated a new era in medicine more wonderful than dawned upon it after the immortal discovery of Harvey!

By way of addenda, we may say that there is no better remedy in the diarrhœa of typhoid and other fevers than the deodorized tincture opium saturated with tannin. This may be given in the ordinary doses of the tincture of opium.

Summer Complaint.

By John T. Booth, M. D., Wyoming, Ohio.

IN the June number of the Gazette, p. 264, "Em Dee" asks for a resumé of "the differential diagnosis" between the "variety of ailments coming under the term of summer complaint." The request made was that the editor of the Therapeutic Gazette give the "differential diagnosis." I have nôt the temerity to attempt to fill the editor's place; quite to the contrary, I offer my mite hoping that I may be corrected if in error. Almost every mother will tell you, if you engage her in conversation on this subject, that she has a "sure cure," "panacea," "specific," or whatever you may choose to call it, for summer complaint. Mrs. A's child, so she tells Mrs. B., has the summer complaint (?), that she has tried an heretofore unfailing remedy, an "heir-loom," that has been in the family for generations, always a specific in this trouble. In this case it has, however, failed signally, as, more than likely, it has in many preceding and forgotten cases. "Why," says Mrs. B., "I have just the thing, it has cured, etc., etc.", *ad infinitum*, and in the goodness of her heart she produces *her* unfailing cure. Mrs. A. returns home, heart-gladdened with the thoughts of Mrs. B's neighborly consideration, and her darling's speedy recovery. The remedy is given "as directed," but the little patient grows steadily worse, at least does not get better. Then Mrs. A. goes to Mrs. C., and from that neighbor learns of a new specific, receives neighborly sympathy and a supply of Mrs. C's remedy, and gives with like result.

This is no fancy picture, conjured up in the jaundiced mind of a patientless doctor, but a simple statement of facts as they have occurred and reoccurred, time and time again, in every community in the land. Not alone are these failures confined to the non-professional; the physician, at times, finds himself at sea.

The reason why the physician then finds himself at sea, so to speak, is, probably, indeed, quite probably,

in the large majority of cases where it does occur, found in the identical language of "Em Dee," in the article now under consideration: "I do not believe that the general run of practitioners appreciate the nature of the conditions which are grouped under it." This, I believe, to be truth in a nut-shell. More of like character follows, viz: "If any one has associated in his mind any definite condition with the name, his conclusion has been reached through his own observation, rather than through the light received from the authorities, for such light is dim and uncertain."

In my judgment—and I am not alone in this particular—"summer complaint" is a misnomer, applied indiscriminately to acute diarrhœa, simple acute dysentery, to cholera morbus, and to cholera infantum, otherwise known as summer complaint of children. It has been defined as: "Diarrhœa occurring in summer—often applied to dysentery and cholera infantum. With some it means cholera infantum only. Its symptoms are invariably those of acute diarrhœa, simple acute dysentery, cholera morbus, or cholera infantum, as may be determined by the locality and manner of the attack. In truth, however, if it is confined to the large intestine it is dysentery, and should be so treated. If there is looseness of the bowels attended with griping pain, fever and thirst, the disease located in the small intestine then it is acute diarrhœa and ought to be considered and cared for as such. If the attack is sudden, although usually preceded by sensations of uneasiness, colicky pain in the stomach, nausea, vomiting, purging, with the severe cramps and pains incident to vomiting, the vomiting and purging occurring in paroxysms, then it should be called cholera morbus, and receive attention as such. If the patient attacked be four or five years old or younger, especially younger, if the attack usually occur in or between the months of June and October, with first, a diarrhœal discharge, the stools becoming sometimes of a watery, colorless consistency, again of a greenish yellow, the pulse quick, head and abdomen hot and the limbs cold, we have in this, in its less active but more persistent form, a malady that may, perhaps, be called—if we can thus differentiate two diseases out of one—summer complaint, otherwise we will have to class it with the more active form of the same trouble, and call it by the name by which it has hitherto been known, viz., "cholera infantum," and give it medical attention as such. Hence, to be successfully treated, this malady should be given the treatment indicated, under the name of the disease, to which, in its various aspects, it properly belongs.

Meteorology of Colorado.

BY A. COMSTOCK, M. D., SILVER CLIFF, COLO.

I FORWARD the following meteorological notes from this point, for the year of 1883, and which may be regarded as good for a district of about thirty miles square, of a like formation, or the area of Custer County:

	Jan.		Feb.		Mar.		Apr.		May		June	
	9 am	4pm	9 am	4pm	9 am	4pm	8 am	5pm	8 am	5pm	8 am	5pm
1	8°	30°	33°	40°	36°	69°	36°	50°	38°	56°		
2	18	36	10	30	34	56	36	46	39	60		
3	24	40	-1	30	30	60	37	50	40	60	Sick.	Sick.
4	18	40	20	40	26	49	34	49	40	66		
5	20	38	18	46	30	51	33	50	42	66		
6	16	40	18	40	30	60	30	48	43	68		
7	18	37	12	36	33	69	37	52	42	64		
8	8	31	16	36	34	59	34	50	40	63	52°	66°
9	10	36	22	48	36	60	35	42	42	67	44	60
10	10	32	38	50	34	60	36	47	46	68	44	
11	12	38	36	50	28	61	33	47	48	68	57	76
12	11	34	30	42	30	60	32	48	45	66	54	92
13	12	33	30	44	35	61	31	49	48	69	50	67
14	11	30	20	40	33	63	34	48	49	69	52	68
15	12	40	22	39	30	62	34	48			50	66
16	10	29	10	30	32	62	33	52			57	70
17	8	20	1	42	36	62	36	54			58	72
18	8	18	16	60	30	10	37	51			58	76
19	-12	zer.	16	62	30	51	34	48			58	77
20	-14	4	28	60	33	55	31	46			50	74
21	—8	12	24	62	33	55	33	48			54	78
22	—1	12	36	64	35	58	33	44			57	78
23	10	34	40	68	36	54	33	44	Sick.	Sick.	54	72
24	22	50	38	62	30	59	33	50			56	77
25	33	54	36	65	38	56	38	52			54	77
26	33	58	38	60	40	60	32	52			66	78
27	34	60	38	62	38	58	36	54			60	74
28	34	50	33	64	36	59	40	55			62	74
29	40	44			20	52	40	58			61	82
30	34	48			33	30	34	56			70	80
31	33	50			30	48						

January:—A slight snowfall on night of 14 and 15, about three inches. Night of 17 and 18, three inches. Night of 18 and 19, 12 inches, and the temperature is marked below zero for from two to four successive mornings. A high northerly wind on night of 29th and 31st. Great damage in Denver and north of Divide in storm of 31st.

February:—East wind on evening of 1st. Cloudy all day 2d. West wind afternoon of 11th. First bluebird appeared on morning of 23. The weather unusually fine all this month.

March:—Heavy snow on the Range west of the valley the 4th. Snow on evening of 25th, four inches in town. Snows on main Range for three days, begining on 29th, with west winds, month fair otherwise.

April:—Snow on 19th, about six inches. Snow on 22d, about four inches. Walking bad on 23rd and 24th. Cloudy on 27th, 28th and 30th. Tornadoes, with loss of life, in East Kansas, Miss., North La., and Texas on 26th and 30th.

May:—Cloudy on 3d and 8th. Rain on 21st and 24th. Snow on 29th. Confined to my room by illness from May 15th to June 8th.

June:—Rain some on night of 8th. Rain on 13th, 24th and 26th. Afternoon showers begins the 30th.

	July		Aug.		Sep.		Oct.		Nov.		Dec.	
	8 am	5pm	8 am	5pm	8 am	5pm	8 am	5pm	8 am	5pm	9 am	4pm
1	62°	79°	52°	68°	54°	68°	50°	70°			22°	54°
2	60	79	54	66	53	70	57	72			20	54
3	63	74	55	68	58	72	50	73			16	50
4	62	72	53	77	54	70	49	70			12	40
5	58	73	55	78	55	72	46	66			18	50
6	65	66	55	77	54	73	43	68			18	40
7	60	62	52	76	55	70	44	69			18	42
8	58	64	55	76	54	72	43	70			20	44
9	62	70	57	74	54	59	48	66			14	41
10	63	78	53	72	58	62	42	64	30°	66°	10	39
11	63	76	52	70	54	70			30	64	12	40
12	68	78	50	63	53	64			28	62	16	42
13	64	72	50	71	54	66			20	60	17	40
14	64	72	55	76	58	70			28	62	16	44
15	64	71	56	74	56	72			24	66	20	48
16	60	74	57	76	54	66			23	64	20	44
17	61	76	56	77	55	63			24	66	22	46
18	66	76	57	76	61	60			29	64	22	40
19	66	74	56	77	52	63			27	54	21	42
20	64	76	56	72	48	62			26	52	26	44
21	60	72	59	79	48	64			28	60	27	46
22	64	76	60	78	45	66			22	66	26	41
23	62	74	64	78	48	62			24	58	24	38
24	62	70	66	77	52	70			22	56	20	39
25	61	72	64	70	54	74			22	58	20	34
26	60	66	60	71	53	76			23	58	22	36
27	58	68	64	78	58	76			24	54	22	34
28	54	66	63	74	59	72			28	54	10	30
29	54	67	60	76	54	70			26	56	20	38
30	54	66	62	71	50	73			23	58	12	34
31	53	67	61	74							zero.	30

July:—Rain on 6th, 7th and 8th. Rain from 26th to 30th, and a wash-out on South Cliff branch of D. & R. G. R. R.

August:—Rain on 1st and 2d. Hail storm on 12th, with damage to grain and stock. Wash-out on R.R. till 21st.

September:—Snow on Range on 20th, 21st and 22d, at night. High wind from 8 to 12 p. m. night of 24th. Bright sunsets begin on 22d.

October:—Snow on 10th and 11th. Absent till November 10th. Weather reported fine and cloudless, and thermometer about 40° at 8 a. m. and 60° at 5 p. m.

November:—High wind on 24th, and much damage reported in Denver. Thanksgiving day very raw.

December:—Snow on 5th and 6th, 12 inches. Fog on morning of 14th and 18th. Snow on 30th and 31st, and quite cold, with high winds.

More About Burdock Seeds.

By W. H. Bentley, M. D., LL. D., Coldsprings, Woodstock, P. O., Ky.

SOME months since, I furnished the GAZETTE a paper on "Burdock Seeds in Epilepsy." Since then I have extended my experience. The case then considered got entirely well.

I have since use it in quite number of dyspeptic cases, all of a "nervous" character, I think, with benefit. I sometimes use it alone, sometimes combined with aletris or hydrastin, or with both. If there are present hæmorrhoids, with collinsonia, and always, I think, with decided benefit.

I have but one case, however, which I consider of striking importance. I will give the case with my entire treatment and leave you, my professional brethren, to judge, how much, if any, was due to the burdock and how much to other means therein employed. The following is the case:

Miss M. is a beautiful blonde. When coming under my care, three and a half months since, æt. 19 years and about six months. She is rather tall and spare, and up to, and for a year after appearance of catamenia (14½ years), had been remarkably healthy and robust. A little more than three years since, and during a severe "snap" and that, too, when the catamenia was present, she went "rabbit hunting" with some young friends. The consequence was a suppression.

She blundered along for a year or more, keeping it from "mamma" all the time, until, finally, she had a "terrible convulsion," to use her mother's language. "It was of the hysterical order." A relation of hers, a gentleman, a graduate of four years' practice, was called—not, I suppose, because "they loved me less, but him more." He treated her almost continuously for more than two years, exhausting the materia medica of its tonics, antispasmodics and its "whatnots" and "and so forths."

January 10th, 1884, he found, suddenly, that he had "business south," (his *cheerie amie*, or something of the kind), and by his request the family said they would send for me. I would consent to nothing short of a thorough examination. Not to be tedious, the most prominent features in the case were habitually constipated bowels, feeble and capricious appetite, very prominent indigestion, frequent fits of persistent vomiting, lasting, at times, for several days, and at catamenial periods, a long series of distressing hysterical convulsions with fixed gaze, locked jaws, difficult breathing and deglutition, and insensible voiding of urine and fæces. A most offensive leucorrhœa was persistent—always present.

On examination, I found the uterus much enlarged, cervix elongated and pointing, some prolapsus with anteversion, vagina almost occluded by a "velvety growth," the product of inflammation. Uterus and vagina much inflamed and extremely sensitive.

I proceeded at once to unload the bowels and correct their languor with the following:

℞ Fl. ext. nux. ʒij,
Fl. ext. wahoo, ʒvj.
Fl. ext. cascara sagrada, ℥j

Mix. Sig. Take 25 to 30 drops three times a day.

The bowels were soon corrected. I then gave F.E. Burdock seeds, at first in half-drachm doses, which were gradually increased to drachms, three times a day before meals, and an additional dose at bed time.

Locally, I used tampons of cotton wool; first the cotton was well washed with soap and water, then dried and well carded. I then thoroughly saturated the cotton in the following mixture: Powdered alum, 60 grs.; powdered borax, 5 grs; hot water, f℥ss.; glycerine, f℥jss. With this cotton the vagina was thoroughly packed, taking care to put the uterus in proper position. The tampon was carefully removed, the vagina well washed with soap suds and re-filled every two or three days.

Improvement was almost immediate, and complete recovery rapid. She is now, June, 17th, 1884, after two months' treatment, entirely well.

I ascribe much, but not all, to the burdock. The cascara mixture was certainly an important factor, and last, though not least, the local measures, so I think.

Compound Syrup of the Hypophosphites of Manganese.

By C. G. Polk, M. D., Philadelphia, Pa.

I SEE in the THERAPEUTIC GAZETTE, May, 1884, a comment on Fellows' nostrum and an attempt to substitute for it a legitimate preparation. I, however, think that the formula herein given entirely fills the bill:

Hypophosphite of Iron	128	grains,
" Manganese	48	"
" Calcium	128	"
" Sodium	128	"
" Quinia	64	"
" Strychnia	2	"
Citrate of Potassium sufficient,		
Alcohol	3	ounces,
Sugar	6	"
Water sufficient to make one pint.		

Precipitate the iron and manganese hypophosphites by adding a solution of hypophosphite of sodium to solutions of the chlorides of iron and manganese, in the form of sesqui-salts, allowing 140 grains of the hypophosphite of sodium to produce the iron hypophosphite, and one drachm of hypophosphite of sodium to produce the 48 grains of the hypophosphite of the sesquioxide of manganese.

Dissolve the hypophosphites by a saturated solution of citrate of potassium. Dissolve the hypophosphites of calcium and sodium in eight times their weight of water or about four ounces of water, and mix with the solution of iron and manganese. Rub the quinia and strychnia with the alcohol and add thereto four ounces of hot water, mix with the other ingredients and add the sugar and with hot water complete the measure of one pint. I, however, instead of the sugar use a saturated syrup of the temperature of 160° F.

Formerly I did not employ the alcohol, but find I make with it a better preparation.

The above is a modification of a formula I have used for a dozen years, but Mr. Ashmead so much aided me in making it satisfactory that I think he is largely entitled to the credit of its creation.

It is permanent, does not change with age, or atmospheric exposure; there is not the slightest trace of a precipitate; is not disagreeably bitter. Dr. E. T. Sabal, of Jacksonville, Florida, President of the Florida Medical Society, has used this syrup for several years and esteems it highly, but his preference is for the following glycerite:

Hypophosphite of	Iron	128	grains,
"	Manganese	48	"
"	Calcium	128	"
"	Sodium	128	"
"	Quinia	64	"
"	Strychnia	2	"

Solution of Hypophosphorus Acid sufficient.
Water ℥iv.
Glycerine suffcient to make one pint.

I refer the reader to my paper on "Phosphate of Iron," in the Medical and Surgical Reporter, August 2nd, 1873, in which this combination of the hypophosphites is first suggested, also to my paper on "Hypophosphites of Iron and its Compounds," January 1875, in which the reader will find that I knew as much then about the therapeutic value of the compound, as subsequent collation from various sources by Mr. Fellows has been able to develope. Really, I do not find a single new suggestion in all of Mr. Fellows' pamphlets. Previous to September 1873, I, however, prepared the syrup of the hypophosphite of iron, quinia, and strychnia, syrup of the hypophosphite of manganese and the syrup of the hypophosphites of calcium and sodium, separately, and combined them as desired. This is noted in the Medical and Surgical Reporter, August 2nd, 1873, and Druggist Circular, January 1874, page 26.

I also refer the reader to my paper on "Tuberculosis," in the New Orleans Medical and Surgical Journal, September, October, and November 1877, and on "Iron and Phosphorus," in Martin's Bulletin, June 30th, 1882. In these the whole subject is most elaborately written up, and if Mr. Fellows will profit by the information, he can change his unsightly compound into a very beautiful one.

Black Haw in Vomiting of Pregnancy.

By W. B. Ketner, M. D., Superior, Nebraska.

RECENTLY, I met in my practice, an obstinate case of vomiting of pregnancy, on which I tried in vain, oxalate of cerium, morphine hypodermically, pop corn, hot water, etc., etc.

I looked upon the case as resulting from faulty digestion, but that could not be improved until this distressing symptom was relieved. After the means mentioned had failed, and my patient was becoming very weak, I thought of black haw, and its well-known effect on an irritable, pregnant uterus. I at once gave it a trial, giving 30 drops of the fluid extract, every hour, for three hours, which I succeeded in getting the stomach to retain, by administering the first dose soon after an hypodermic injection of morphine. After the three hours were up, my medicine was still retained, I diminished the dose to 20 drops and made the time between doses 2 hours. Twenty-four hours had not passed when all nausea had ceased, and the stomach tolerated food.

Attention for a few days to my patient's imperfect digestion has put her into a very comfortable condition. In two former pregnancies this lady has suffered for nearly a month from this very annoying complaint, and became so exhausted as to be unable to leave her bed.

I feel like acceding to black haw, that it may be of good use in this new field, though one case can do but little more, perhaps, than suggest its use in such cases.

This patient had been vomiting for two days before I saw her, and for the next three days I only partially relieved her, until I tried the black-haw. On the morning of the sixth day after the vomiting began, she ate a hearty breakfast and has continued to improve up to the present time.

Case of Dyspepsia and Chronic Chills Treated with Tincture of Eucalyptus Globulus.

By C. Baklow, M. D., Eaton, Ill.

MRS. W., age about 45, has malarial cachexia, and dyspepsia of long standing. Has had tertian ague at intervals for the past five or six years. During this period, and for some time previous, her digestion was so poor at times, that she could take no other food than bread and water. I treated her a few years ago for this trouble, and she improved very much on quinine, tincture of nux vomica, and Fowler's solution. Her trouble returned last fall, and her condition became worse than before. She had a chill every third day, appetite poor, and vomited whenever she took food. Crackers and water constituted her sole diet. She was very thin in flesh. Said she could not retain medicine of any kind on her stomach, and especially quinine. I learned that she had been taking various remedies without receiving much benefit, on account of her rebellious stomach. I determined to try eucalyptus globulus, and gave thirty drops in about one ounce of water, every four hours. Vomiting ceased immediately, appetite improved, chills became lighter, and finally disappeared. The chills returned subsequently, and were broken this time with quinine. There was no return of the vomiting, her appetite remained good, she gained flesh rapidly and is now well. Except the few doses of quinine, she took no other remedy than the eucalyptus.

Translations.

[All articles signed "T" are translated for THE THERAPEUTIC GAZETTE by C. W. Tangeman, M. D., Cincinnati.]

Syrup of the Hypophosphites (Fellows').

Dr. Adolph Tscheppe, New York, has the following in the Pharmaceutische Rundschau for March, 1884: An account of the composition of this semi nostrum, so extensively employed among us, and, as it would appear, in Europe also, which was published first in an Austrian journal, and has been going the rounds of the pharmaceutical journals in this country, appearing, indeed, in the February number of the Rundschau, is, in essential points, so grossly erroneous that it would seem desirable that its statements should be at once corrected. The alleged analysis of A. Gawalowski, of Brünn, arrives at results so different from what I have reached in repeated examinations of the preparation named, that I can only conclude that it was either very superficial, or that it was similar in character to that on the strength of which Prof. Godeffroy recently ventured to give testimony in Vienna in regard to the famous Swiss pills. Such pretended analyses of secret remedies bring into discredit the trustworthiness of the results of analytical investigations generally, and in the war against the secret-remedy nuisance such weapons only injure those who use them. Should any druggist, on the strength of Gawalowski's analysis, prepare a syrup as a substitute for Fellows', the chances are that the proportion of strychnine introduced into the preparation would prove dangerous, equally to himself and to his customer.

Fellows' syrup has a very feebly acid reaction. The turbidity observed in the syrup clears up on the addition of a few drops of acid, and returns if it be again made feebly alkaline.

The actual composition of the syrup, according to my investigations, is as follows:

One hundred parts by weight contain:	
Quinine and strychnine, anhydrous	0.10.
Hypophosphites, reckoned as sodium salt	1.00.
Iron and manganese oxides	0.15.
Calcium, sulphuric acid, (evidently derived from quinine sulphate) phosphoric acid,	traces.

The alkaloids were separated by repeated extraction of the alkaline solution with ether; three washings with the ether removed completely the bitterness of the syrup. From fifty grammes of the syrup 0.050 of alkaloids was obtained, consisting of quinine and strychnine. Brucine was not found. Gawalowski must have concluded from the color and the turbidity of the syrup, in which strychnine, indeed, was present, that an extract of nux vomica had been employed, overlooking the circumstance that the solution cleared up on adding a few drops of sulphuric acid, and that it showed, by its strong fluorescence, unmistakable evidence of the presence of quinine. These reactions show that there was not sufficient ground for assuming the presence of the aqueous extract of nux vomica, a preparation very weak in alkaloids, and one scarcely known outside of Germany.

Gawalowski assumed the presence of brucine without attempting to prove it; wholly overlooked the presence of quinine, and committed the grave blunder of reckoning the whole of the alkaloids present as strychnine and brucine, so that each teaspoonful dose, according to his estimate, must contain one-tenth of a grain of those alkaloids. The circulars accompanying the bottle state that the syrup contains in each teaspoonful the conventional dose of one-sixtieth grain strychnine. The very moderate bitterness of the syrup leads us to conclude, however, that even this quantity has of late been diminished.

The hypophosphites were estimated by means of iodine. It was ascertained in the first place that the sodium hypophosphite of commerce required 2.4 times its weight of iodine for oxidation. A solution of iodine in potassium iodide was employed, and the reaction, which took place only gradually, was hastened by employing the heat of a water-bath. The hypophosphite solution was heated in a glass-stoppered flask, with addition, at intervals, from a burette, of the iodide solution of known strength, until a permanent coloration of the fluid was produced. An excess of the reagent might be added in the first instance, and after allowing one hour for the reaction to take place, the remaining iodine could be determined by titrating back with a solution of sodium thio-sulphate.

For 25 c. c. of Fellow's syrup, 0.57 grammes of iodine was required; dividing by the factor above found, 2.4, we shall find that this corresponds nearly with one per cent. of sodium hypophosphite.

The iron and manganese were precipitated by ammonium sulphide, and after oxidation with nitric acid were weighed as oxides. The proportion of iron is so small that only a green coloration was produced in the solution by the reagent, (potassium ferrocyanide, doubtless,—trans.), from which it is evident that the iron exists in combination with an organic acid, and further experiments indicate that it is in the form of a double salt—phosphate or pyrophosphate—not certainly, as Gawalowski states, in the form of a ferrous compound. By heating, the precipitate of sulphides was made to collect in flocks, so as to be easily filtered out. Twenty-five grammes of the syrup yielded 0.035 of the ignited oxides, which gave, by fusion with sodium carbonate a green mass. It contained, therefore, manganese.

The proportion of iron is so small that one may conclude that it was not added purposely, but that it formed an impurity in the sugar used, since on acidulating the syrup, a blue precipitate is thrown down, consisting, it appears, of Prussian blue originally employed to give whiteness to the sugar.

From these analytical data we may deduce the following working formula for preparing a substitute for Fellows' syrup of the hypophosphites, and the correctness of the analysis is evinced by the close similarity of the product in every particular with the original:

Soluble phosphate of iron, U. S. P., or pyrophosphate of iron	15 grains.
Sodium hypophosphite	45 "
Sulphate of quinine	5 "
Strychnine, previously dissolved by itself	½ grain.
Manganese hypophosphite or sulphate	15 grains.
Syrup, sufficient to make	1 pint.

Dissolve the salts by the aid of a gentle heat, without adding any acid.

The Root of the Cotton Plant (Rad. Gossypii Herbæ) as a Substitute for Ergot.

In the Southern States of North America this remedy has been used for criminal purposes, to produce abortion, by the laity. Dr. Prochownick, has in the past four years, investigated the properties of the root of this plant clinically, and submits the following report: He employed it both during the first and second stages of labor. He always administered it in the form of an infusion* which is always made fresh, (3.0 to 6.0 [ʒ ¾ to ʒ iss] every hour). A fluid extract† may also be given in 1 to 2 teaspoonful doses every half hour. The intensity of action is not so great in the extract and nearly a double quantity must be used; it is much handier than the infusion.

P. speaks very reservedly on the subject as yet, since it requires further observation, but his results so far have been very satisfactory when given to cases during accouchement. In private practice a remedy seldom acts so favorably from the first, because its action cannot be so thoroughly watched. With regard to the safety of the new drug in gynecological practice, he speaks quite positively. The first patient to whom the remedy was given, suffered from an interstitial fibroma which caused copious and frequent hemorrhages. Secale had no effect, save to cause an intense spastic migraine every time when taken. The effect of gossypium was astonishing, its action was prompt, caused no unpleasant secondary effects, nor was it objectionable to the patient.

The effects of ergotin subcutaneously are very objectionable to many patients on account of pain, but P. has, during the last year, arrived at that point where he no longer employs ergot during the intermenstrual period, and but very seldom during menstruation.

In many patients an absolute diminution in the size of the tumor could be distinguished during a course of this treatment, while in others they did not get any larger. The physiological action differs from that of ergotin. If given during a hemorrhage, but little action can be recognized; if administered immediately after the following attack will be much shorter and milder; the quantity of blood lost diminishes; and, finally, the periods between the attacks are of longer duration. In cases of subinvolution, after confinement and after abortion, it acts admirably. In gynecological cases an infusion of 10.0 (ʒ ijss) once a day, or 7.5 twice a day, may be given; the fluid extract should be given 2 or 3 times daily in two-teaspoonful doses.

If we compare radix gossypii with secale, we must acknowledge that the latter drug is more active during parturition. In order to obtain the same effect with the former drug too frequent dosage is necessary, while to obtain the full effect sometimes valuable time is lost. On the other hand, ergot often brings about bad results. Gossypium may be given in large doses with impunity, especially when given during the first stage of labor. In gynecological practice, on the other hand, ergot cannot concur with gossypium since here rapidity of action is not so necessary, and the remedy can be given without any unpleasant secondary or after effect, as is frequently complained of during a prolonged course of ergot subcutaneously or per os.—*Wiener Medizinische Blætter.* T.

* The required amount of the drug is put into a cup and allowed to macerate in hot water for six or eight minutes; filter it and it is ready for use.

† The fluid extract should be prepared according to American Pharmacopœia; one grain of the extract is equal to one grain of the root.

The Anti-pyretic Action of Kairine.

Dr. A. Halla, in an address delivered before the Verein Deutsché Aerzte, in Prague, chose kairine as his subject.

The kairine used by Prof. Halla in his experiments was obtained direct from the laboratory of Meister & Lucius. The temperature was taken in the rectum, during every 15 to 30 minutes, from six o'clock in the morning to 12 o'clock at night; occasionally a series of days were allowed to pass, the patients receiving no medicine at all, in order to observe the course of temperature during this time. He nearly always worked according to Filehene's directions, but in some instances larger doses more frequently given, were necessary. Fourteen patients, two with arthritic rheumatism, one with pleuritis, one with croupous pneumonia, four with typhoid fever (one mild case), one with remittent fever, four with pulmonary tuberculosis, consumed during 40 days of testing 157 gm. (ʒ v) of kairine. In certain cases during some days the temperature resisted the action of kairine very much. It was no easy matter to fix for any length of time the antipyretic effect of this drug, and sometimes it failed entirely to have any effect whatever, even in doses of 0.75 to 1.0 (gr. x—xv); the phthisical patients were the least resistent.

The administration of kairine never caused any unpleasant symptoms; the patients always felt well; the excessive sweating caused little complaint unless it continued too long. Uneasiness or maniacal excitement did not occur as when large doses of resorcin are given. The pulse was affected pleasantly; nearly always it was reduced, not weakened. The medicament was given in capsules, and on the whole was tolerated pretty well; ten times it caused vomiting, five times in the case of an old phthisical patient, possibly on account of the irritation from the cough than from the medicine. In this case rectal injections were finally resorted to, with more satisfactory results. The rapid rise of temperature after a decline is not a pleasant effect; during the 40 days it occurred four times, lasting occasionally four hours, causing marked chilliness, and 13 times brought about a chilly sensation. This unpleasant effect could not be warded off, even by large doses of kairine. It occurred sometimes after 1.0 1.5 (gr. xv—xxij) in divided doses. Collapse was only observed in one case of severe typhus, after the use of 3.0 (gr. xlv) of kairine during 24 hours. During six days the study of kairine was entirely satisfactory, inasmuch as it was successful in keeping the temperature reduced for a number of hours without causing any unpleasant secondary effects. On the other days the result was far from being satisfactory; either the effect was of short duration or was not well marked. On the strength of the above experiments and observations, and in consideration of the work in this field of Guttmann Mirkel, Riess, Freymuth, Poelchen, Faeurich, and Riegel, Halla comes to the following conclusion: It is not at all probable that kairine will ever enjoy a wide range of application, or ever be generally employed, since its administration is so complex and so circumstantial; it requires the frequent use of the thermome-

ter, the temperature should be taken in the rectum from hour to hour, and then the dose regulated accordingly. In the face of all this care and labor, the results not unfrequently are, to say the least, unsatisfactory. The summary of the results of Guttmann, Riess and Halla is, that out of 170 experimental days there is an average of one severe chill every three days. We are compelled to oppose the premature triumph of the chemists, with determination, since they have not succeeded to synthetically prepare an article that can displace or even compare with quinine. One glance at the temperature-cards of the cases where quinine in one large dose (1.5 to 2.0 [gr. xx to gr. xxx]) and kairine in divided doses was given, will illustrate the above. H. is not of the opinion that quinine can be given in all cases with the desired results. In severe cases of pneumonia and typhoid fever 2.4 (gr. xxxvj) doses quite often have no effect worth mentioning on the course of the temperature. T.

Osmic Acid in Peripheral Neuralgia.

For some time there have been occasional references in medical literature, to the use of osmic acid in peripheral neuralgia. This trouble has not been amenable to treatment, therefore we will briefly give the results of A. Eulenberg in 12 cases. To Winniwarter is due the credit of causing an interest in the therapeutic action of osmic acid. Weuber calls attention to two cases of severe tregiminus neuralgia and one obstinate case of five months' standing of sciatica, treated by injections of osmic acid, with entirely satisfactory results—even when all the known remedies had been prescribed with little or no results. The formula used by E. in the treatment of his cases is as follows:

℞ Acidi osmici 1.10, (gr. xvij).
Solve in aqua distill 10.0, (℥ ijss).

Put in a dark glass, securely stoppered, bottle.

It is always preferable to prepare the injection immediately before using, since after standing a little the solution decomposes, or rather discolors; while this does not make it inert, it is more desirable to use it fresh. The dose oftenest used ranged from 0.05 to 0.05 (gr. $\frac{1}{6}$—$\frac{5}{6}$). Even larger doses do not cause any unpleasant after-effects or secondary symptoms. In order to obtain the anti-neuralgic, palliative or curative effect, it becomes highly necessary that the injections be made in the region of the seat of pain, or as near the affected nerve as possible. If made into the paraneurotic tissue the acid will, undoubtedly, with its great power of diffusion, penetrate into the perineurium and nerve substance, producing thereby a local effect. E. deems it quite important that some attention should be paid to the region of injection, the same as when morphine and carbolic acid have been used. It has occurred that patients demanded a repetition of the treatment in a different region, since the pain had entirely disappeared from the original site. The therapeutic results, generally, when taking all of the cases together, are not so very brilliant. Among the 12 cases treated only three were cured. No relapse in 14 weeks. In four cases there was a marked improvement, and in the remaining five cases there was no result whatever. The three cases that recovered were acute, uncomplicated and possibly of a neuritic or perineuritic origin, while in the cases where there was no change at all there were complications; the cases were of long standing with multiple forms of neuralgic affections. We must, nevertheless, not forget to call attention to the fact that in the cases that were relieved no other therapeutic agent had been employed, and the course was of short duration, three or four weeks—about the average time when treated with other narcotics. The author hesitates somewhat to fully recommend osmic acid as an anti-neuralgic remedy, while it undoubtedly enjoys the property of being a capital remedy in many cases of this disease.—*Wiener Medizinische Blætter.* T.

The Action of Muriate of Cocain on the Human System.

In 1883, Aurep published a series of experimental studies with this body, made at the Pharmacological Institute of Würzburg, on animals. Questions that arise there cannot be studied on animals that are caged, according to Dr. Aschenbrandt. In order to study this subject thoroughly it requires a number of healthy individuals (not animals caged), who are subjected with deprivation of food, to severe physical exertions, etc. Such an opportunity A. found during the annual drilling of the Bavarian Army. Bibra had made a series of physiological experiments on himself with the leaves under severe and prolonged marching. The leaves cause a peculiar taste in the mouth and an increased secretion of saliva, but no effect on the nervous system. He frequently, without any food at all during the day, continued marching until night, and then enjoyed a hearty meal as usual. B. does not say what it is in the leaves that causes this action. Gaedeke, Gorrup and Johnson all agree that it is a substance which acts not unlike caffein, supplying a want in the system and causing a diminution of oxygenation. The experiments of Aschenbrandt prove that the alkaloid cocain found in the leaves is the substance poisoning, the wonderful properties described by Mantegazze Moredo, etc. A. employed this alkaloid and found that an individual is rendered more capable to endure hardship under its administration than without it; he can undergo great bodily exertion without experiencing fatigue. During my observations, in many instances the parties that were observed knew nothing of the administration of the remedy. It was given them in their coffee. A very typical case occurred, when the thermometer was quite high: C. H., who enjoyed a reputation of being a good soldier, fell down exhausted after some days' march. I administered 20 drops of a cocain solution, containing 5 gr. to 10 gr. of water, and after a reasonable length of time another but smaller dose was given. After resting for a little time he voluntarily arose and followed his regiment, and walked a distance of several kilometers, during the hottest part of the day. He felt quite well and cheerful; there were no bad secondary or after effects." I have frequently employed it under other circumstances in exhaustive diseases, and found it to act admirably. There is no doubt whatever but that the action of cocain on the system is far more agreeable than that of any alcoholic stimulant. If this remedy proves what is claimed for it, it should be

more thoroughly investigated; until now the experience is limited. Alkaloids of this kind are, as a rule, expensive, and not to be brought within reach of the general busy practitioner.—*Med. Chirurg. Centralblatt.* T.

Amorphous Borate of Quinine.

Among antipyretic remedies quinine, undoubtedly, still ranks first. The price of this alkaloid being very high, chemists have been making a desperate effort to substitute a remedy that is efficient, and at the same time less expensive. Some hope has always been entertained that the cinchonidia group could be made to yield a substance that possesses the specific properties for which quinine is so renowned. Finkler called the attention of the profession to an amorphous borate of quinine. It was employed in doses ranging from 0.50 to 1.0 (gr. vijss to xv) repeated every half hour to one hour, consuming about 3.00 (gr. xlv) in the course of two to four hours. It was administered in capsules. In cases of tuberculosis, acute and chronic catarrh of the stomach, and other febrile diseases it was given with a view to determine its tolerance of the drug. The conclusions are that patients tolerate it very well in both acute and chronic diseases. The author thinks it is best borne when some water, or a swallow of wine or cognac is afterward taken. The subjective symptoms generally, but especially the tinnitus aurium is not so great as following muriate of cinchonidia. A dose of 0.50 to 3.00 of borate of cinchonidia was sufficient to reduce the temperature in a case of typhus abdominalis, erysipelas, pneumonia, phthisis, etc., with safety. Its action is much slower and more lasting than the other alkaloids of the same group. To have an evening temperature lower than the morning temperature is not a general condition, but does occur. If reduced in the evening it does not rise by morning. Two to four hours after administration, a reduction of temperature cannot be determined yet. Larger doses than 3.00 (gr. xlv) have not been employed by the author, but they act more rapidly. F. resumes as follows: Since the action of this remedy is such that the patient will tolerate it in large doses, and since its action has been shown to be antipyretic as well as antiseptic, it becomes our duty to recommend this drug, on account of the cost being much lower than that of quinine. —*Ibid.* T.

The Treatment of Ozœna.

Ozœna, according to the definition of Roth, consists of a chronic inflammatory process of the nasal mucous membrane, with a tendency to atrophy; the secretion from the glands becomes altered, forming a membrane containing organisms which decompose and cause that intolerable odor. The following points are demanded of therapeutics: 1. To soften the dried secretions, remove them and prevent their formation. 2. To restore diseased mucous membrane to a normal condition. 3. To remove the odor. R. makes an effort to accomplish this by the dry tamponade of Göttstein. In the morning he employs a mixture consisting of the following ingredients: Thymol 1-10 per cent., acid carbolic ½ per cent., with a 1 to 2 per cent. solution of tannin or alum, by means of a spray. He claims that by this process even the remotest portion of the nasal mucous membrane is reached.—*Deutsche Medizinal Zeitung.* T.

Chromic Acid in Diseases of the Mouth.

Canquil recommends the use of chromic acid in mercurial gingivitis. In the venereal department of Montpellier, Roustan employed this form of treatment. In many instances two or three applications of a five-per-cent. solution applied to the gums by means of a brush, is quite sufficient to produce the required result. C. reports a number of cases of gingivitis produced by the gray salve, where the application was made at intervals of two days, with the result of curing the case. In two cases of angina, with enormous hypertrophy of the tonsils, (syphilitic) chromic acid proved to be the most effectual remedy, after a number of other drugs had been used. In two cases the remedy was applied four times in the course of two days, resulting in the cure of both patients.—*Bul. Gen. de Therap.* T.

Treatment of Diphtheria with Papayotin.

Dr. Schæffer recommends the use of a five-per-cent. solution of papayotin as a local application in diphtheria. It should be repeated every ten or fifteen minutes, and in the course of a few hours the false membrane will be loosened and the exudation entirely absorbed. The temperature sinks very rapidly after the membrane has gone. The only real objection that can be urged against papayotin is its extremely high price. In consequence of the expense of this drug, Ewald suggests the use of an active pancreatin, which possesses the same albuminalytic properties as papayotin. For this purpose we might employ pancreatinum siccum, or the glycerine extract of the fresh gland. —*Deutsche Medizin. Zeitung.* T.

Correspondence.

Philadelphia Letter.

A paper was read before the County Medical Society, June 25th, by Dr. F. E. Stewart, of this city, entitled; "How can physicians aid in elevating the profession of pharmacy." In it he urges the co-operation of the medical and pharmaceutical professions in the suppression of pharmaceutical quackery, and that both professions unite in the study of drugs for the benefit of science. He suggested that the manufacturing houses, and retail druggists, be alike held responsible in their relation to science, and rewarded in proportion to the amount of work done by them for the benefit of science, and the profession. While holding that pharmacy and medicine ought to be practiced as separate professions, he said that he believed that progress in pharmacy could only be secured by conformity to the demands of a scientific therapeutics. He spoke very strongly in favor of manufacturing houses aiding in the work of investigating the materia medica, both new and old, and advised that they provide themselves with scientific departments employed to do scientific work. These departments should work for the benefit of science, unhampered by trade affiliation.

To prevent pharmacy from drifting away from therapeutics, the doctor suggested that the old classification of materia medica, pharmacy, and therapeutics, under the general term pharmacology, be again brought into vogue, and that this name include the knowledge of drugs from all possible points of view. To unite the two professions in the study of drugs, and for the suppression of pharmaceutical quackery, he suggested that there be established at Washington, under the auspices of the Smithsonian institution, a laboratory for original research in this department of science, and a national pharmacological society to co-operate with its workings, and with the various interests in the pharmaceutical field. It was his suggestion that this society be composed of both physicians and pharmacists.

Several gentlemen discussed the paper, among them Prof. H. C. Wood, the eminent therapeutist, and Prof. Jos. P. Remington, equally well known as one of the leading pharmacists of the country. These representative gentlemen of the two professions gave opinions which can be regarded as expressing the sense of their respective constituencies, in an unbiased manner, and, as they are both students of the times, in a more than usual degree, I will give you a brief resumé of their utterances on this very interesting and important subject.

Prof. H. C. Wood: In the first place, a very important point opened for discussion is the relation between the profession of pharmacy and the profession of medicine. Originally these two professions were united in one individual; the pharmacist and the doctor were the same person. I have always believed, and I still believe, that it has been a gain to both professions that the two have been separated. I do not think it possible at this day, when medical science embraces so much, for one man to know everything that pertains to it. In the two or three years high-pressure work through which we squeeze our medical votaries into the profession, it is certainly impossible, and I think improper, to teach materia medica in the sense which a pharmacist has to know it. You cannot get a medical profession which will be composed of judges of whether this drug is or is not pure. In this world we must have faith in somebody, and in this case it is in the pharmacist. I do not think we can gain anything by attempting to unite these two professions, which are distinct though co-related.

I think it were desirable, if practicable, to have some common ground, some common society, some mode of recognition, whereby the lambs of the pharmaceutical fold could be separated from the multitudinous goats which bleat everywhere. Whether this is practicable or not, I do not know.

There is another point in Dr. Stewart's paper, in which we are brought on the verge of a battlefield of an internecine war which is waging between the manufacturing houses and the retail druggists. I must confess that I do not exactly see where this conflict is coming out, but I do see that we have no business as medical men to use or recognize any proprietary remedy, the various compounds whose name ends in "ine," or any substance whose composition is unknown and various. Probably it is good at first until a reputation is made, but then it deteriorates. Further than this I do not see that we can take any other action in regard to this struggle which is going on between the large and the small.

What seems to me the most important part of this paper of Dr. Stewart, is that in reference to the formation of a national pharmacological association, in which both doctors and pharmacists may meet. I think that that is probably practicable, as it is desirable. It would certainly be very desirable to have, in connection with the National Museum at Washington, a laboratory of original research in this regard. As is well known, the policy of this government is to maintain a speck of a regular army, which shall be the skeleton of an organization that shall expand indefinitely in time of war. It seems a necessity to this plan of organization that there should always be in the employ of the government, numerous medical men for whom there is little work, but who would be essential for the opening out of the executive minutiæ of hospitals in time of sudden war. Without expense to any one, some of these men could be well employed in connection with the National Museum in pharmacological research. It is well known that now at least one officer of the United States Navy is employed in the National Museum, to collect drugs and do the materia medica part of the work.

If we make a great ado about this matter, and attempt to found a great pharmacological laboratory, which, like Jonah's gourd, will arise in a day, it will wither when the sun comes out. What is wanted is to get the attention of two or three men of great mind and equal influence at Washington, and not attract the attention of the rabble, which makes up the house of representatives, and perhaps also the senate, and having done this allow this thing to grow, until it cannot be set aside.

* * * * * * * * *

Perhaps I have wearied you, but allow me to say one word in regard to the relation of manufacturing firms to scientific investigation. If a commercial firm desires to set aside a certain amount of money for scientific investigation, why science gains. It makes little difference to science where the money comes from, provided that the scientific workers are not associated with anything that is disreputable.

Prof. J. P. Remington: I have listened with a great deal of interest to this paper. I am sorry that it has taken such a wide range. I am sorry that Dr. Stewart had so many interesting subjects.

I was very glad to hear the remarks of Dr. Woodbury on one point, for which I felt considerable anxiety. One of the previous speakers advocated the very radical doctrine that it was proper to prescribe anything that would do good under any circumstances. Such free trade in medicine would, I think, destroy entirely all scientific work. When I heard Dr. Woodbury state that the Philadelphia County Medical Society had taken official action and decided that it was unethical to prescribe anything but medicines of known composition, I felt greatly relieved. I hope the medical profession will never take that position, for it is one which is exceedingly annoying to us, placing the pharmacist continually in an embarrassing position. On the one hand there is one set of physicians continually declaiming against the practice of encouraging the sale of patent medicines, and on the other hand there is a set of physicians who believe in free trade; and many pharmacists go so far as to take the ground that they would not keep

patent medicines if it were not that the physicians frequently prescribe them.

With regard to the troubles between the manufacturing pharmacists and retail druggists, I think that they can take care of themselves. I think that the numerical strength of the retail pharmacists is sufficient to keep down the commercial strength of the manufacturing pharmacists. It is a war in which physicians can afford to stand aside, and let them fight it out. The result will, I think, be the elevation of pharmacy.

Dr. Woodbury touched on a point which I think is the key-note of the whole discussion, that is the formation of the National Pharmacological Association from a committee of physicians and pharmacists who have charge of the revision of the National Pharmacopœia. There is a definite aim. If a pharmacological association could be formed in which physicians and pharmacists could meet on a common ground, and in which there was a provision in the constitution or by-laws, shutting out entirely any discussion about business or trade interests, and allowing simply the discussion of scientific subjects, I think that we should find that through the influence of such a society, we should have, in 1890, a pharmacopœia which would not be the subject of so much adverse criticism.

* * * * * * * * * *

The kernel of Dr. Stewart's paper seems to be the formation of some society in which physicians and pharmacists can be brought together upon some common ground. If such a society can be formed, the pharmacopœia of 1890 will show a great improvement over that of 1880.

The paper was also ably discussed, both pro and con, by Drs. Seiler, Dwight, Dr. Frank Woodbury, the distinguished editor of the Philadelphia Times and by Mr. Sayre, editor of the Druggists Journal. But space will not permit me to give more of the very interesting points that were brought out by the discussion.

Carbolic Injection of Piles.

In the May No. of the THERAPEUTIC GAZETTE, I notice an article with the above title, in which the writer gives his formula, which I notice contains more ergot than acid and I asked myself the question, why did he not call it ergot injections, etc. However, I am not writing for the purpose of criticism, but it occurred to me how near we sometimes approach each other when in the same line of thought. I, too, have used much the same formula and can testify to its effects, but cases will occasionally be found where the suffering is so acute that the very idea of an operation seems only to add to the agony the patient already suffers. For the relief of these more acute symptoms, I have used with good success an ointment composed of·

℞ Opii pulv, gr. xx.
Acidi tannici gr. xx.
Acidi carbolici, gr. x.
Ergotæ liq. pur., ʒ ij.
Ungt. petrolei ʒ j.

Mix. Rub the opium and tannin together, then add the carbolic acid, then the ergot, and triturate well, and last, the cosmoline. The proportions may be varied as may be necessary.

This will be found to be a smooth jelly-like ointment, very easily applied and very soothing in effect. I usually direct a hot bath for a half hour, after which, when the parts are well dried, I have this ointment applied, and in acute cases cures are often effected. I do not think anything will ever take the place of injections in chronic cases, but in cases occurring as a sequel of dysentery, etc., the above has so far met the indications well, as a rule. I met with one case where even so small an amount of carbolic acid could not be tolerated. One very severe cases of rectal prolapsus when the whole rectum was enormously swollen and exceedingly sensitive, was completely cured by the above, always, of course, keeping the bowels in a soluble condition. I frequently use the same formula for suppositories by filling rectal capsules of appropriate sizes. I look upon the ergot as the most important agent in the formula, and I feel sure that the necessity for injections can many times be avoided by the above method.

W.

Glacial Phosphoric Acid Test for Albumen in Urine.—Carbolic Acid for Piles.

The original and selected articles in THE GAZETTE, for May, on urinary tests, were interesting and really useful; but in all the tests given for albumen there is no mention of glacial phosphoric acid. I have used this test, and, as I supposed, with results that were reliable enough for the practical purposes of diagnosis, though, of course, not critically accurate. My method is to fill a medium-sized test tube, to the depth of three inches, with the suspected urine, and then drop into it a piece of glacial phosphoric acid, about as large as an orange seed. Then place the thumb over the mouth of the tube, and turn it bottom upward and back two or three times, so as to throw the lump of acid back and forth through the urine; set the tube at rest, and in a few minutes the albumen, if present, will settle as a coagulum in the bottom. The proportion of this precipitated coagulum to the amount of urine in the tube gives a general idea of the extent of albuminous derangement in the kidneys. The glacial phosphoric acid is highly deliquescent, and for that reason, perhaps, cannot be utilized in the preparation of test papers; but it was the simplest and easiest test for albumen that I had heretofore known, and I would like to know if other practitioners have used the same with satisfactory results, or whether I was trusting a valueless and delusive process.

I can confirm the report of Dr. Wm. T. Fleet (in May No. of GAZETTE, page 215) on hypodermic injection of carbolic acid for the radical cure of hæmorrhoids. Sweet oil may be used as a diluent, instead of glycerine, if preferred. It seems less liable to untoward results than any other treatment for piles yet known to the profession.

H. A. REID, M. D.

PASADENA, Cal.

Papular Eczema.

Will you or some of your readers give in the GAZETTE a successful method of treating a form of lichen, popularly known as "mange," "scratches," etc.? It comes in the form of small acuminated vesicles, not as large as the head of a small pin, which, when broken, have a "red head." They

occur chiefly upon the flexures of the limbs and on the buttocks; they are accompanied with intolerable itching, chiefly at night after getting in bed. Every portion of the body is at times covered with this eruption, and patients frequently present themselves with marks of their finger nails all over the body.

Your subscriber has used alkaline baths and carbolic acid applications, besides many other applications, with arsenic internally, but has not yet developed a plan which gives speedy relief to this most pestiferous trouble.

AGRICOLORUM MEDICUS.

[The location of the eruption would seem to indicate that it is papular eczema, rather than lichen, to which our correspondent refers. The two are very much alike in their appearance, but lichen has a preference for the extensor surfaces, while eczema usually attacks the flexor. We would suggest the internal use of full doses of acetate of potassa combined with tincture of nux vomica: abstinence from animal food; and the external application of an ointment made of the oleate of aluminium, or the formula suggested by Dr. Loop in our present issue.—ED. THER. GAZ.]

Mullein Leaves Smoke in Phthisis.

In the GAZETTE for June, 1884, I read with interest an editorial entitled "The Local Treatment of Phthisical Cough." The treatment referred to the use of dried mullein leaves smoked in an ordinary clay pipe, as suggested by Dr. Quinlan in the British Medical Journal, of April 5th.

During April and May I selected three cases of chronic phthisis, with cavities, from my hospital wards, and three cases of phthisical consolidation from private practice, putting all on the above-mentioned treatment. All were males, and all but two were (or had been) tobacco-smokers. The following were the results after a ten-days trial:

In one case of cavity the cough was distinctly aggravated.

In the other two cavity cases no benefit was derived.

In one consolidation case no effect was produced.

In the two remaining cases of consolidation a limited amount of relief was gained by a frequent use of the drug.

I trust that a more extended trial may give better results, but must confess that my small experience with the "mullein pipe" is not encouraging.

C. M. CAULDWELL, M. D., Visiting Physician St. Joseph's Hospital, Instructor New York Polyclinic, etc.

NEW YORK, 200 W. 52nd St.

Dewberry (Rubus Procumbens) in Dysentery.

In the May number of the GAZETTE is an extract from the Virginia Medical Monthly, of an article by Dr. John S. Lynch, read before the Medical and Chirurgical Faculty, of Maryland, in which dewberry is highly spoken of as a remedy in dysentery. I wish to state that my experience with the drug corroborates what Dr. Lynch states. Dewberry root is a valuable remedy.

I may be permitted to express my dissent from the political sentiments contained in Dr. Lynch's paper. A discussion of such matters is, I know, out of place in a scientific journal, but it makes, even at this late day, the blood of a union man boil when he finds a professedly scientific paper interlarded with such statements as: "In which one of the parties gained the dishonored pre-eminence of declaring for the first time in the history of civilization, medicines as 'contraband of war.'" The sentiment is quite irrelevant to the question of the value of dewberry in dysentery, and were the discussion of the righteousness of the measures employed to crush an unholy rebellion, in order, I think there would be little difficulty in proving to all, save the "unreconstructed," that if the government erred at all, it was on the side of leniency. When will our southern brethren become reconciled?

J. FRANCIS, M. D.

HALSTEAD, KANSAS.

Eczema Papulosum.

I have treated at least one hundred cases, both acute and chronic, of this distressing affection, with perfect success, and, therefore, I can recommend the means employed to the profession:

℞ Ammoniated mercury gr. xii.
Flow. sulphur gr. xxx.
Vaseline,
White wax ää q. s. ad. ʒj.

Mix the sulphur and mercury in a mortar with the aid of heat; melt the wax and add to the vaseline; then add the sulphur and mercury previously mixed, and stir constantly while cooling.

Preparatory to using the ointment, have the patient to use soft soap smeared over the surface and washed off clean, following this for four evenings in succession with a strong suds made with soft soap, anointing the body each evening with the ointment after the bath. I have cured acute cases with the soap process alone, and experience has proven to me that without the soap, the treatment will not be successful.

Z. U. LOOP, M. D.

GALVESTON, INDIANA.

Summer Complaint (Cholera Infantum) in Children.

This complaint usually attacks children between the ages of two months and three years. It occurs in hot weather, and is chiefly confined to cities. It is very fatal. It commences with a profuse diarrhœa—stools thin and variously colored. The stomach becomes irritable, and rejects everything. Loss of flesh, languor, and prostration follow, and stools become colorless and odorless; skin is dry and harsh, head and abdomen hot; thirst is great; fever at nightfall. Delirium is present in many cases, indicated by violent tossing of the head, etc.

The above is my understanding of the so-called summer complaint or cholera infantum, and I deem it important that writers on this subject, during the approaching season of its prevalence, confine their remarks strictly to the disease of which these are the salient symptoms. Any discussion of the other forms of diarrhœa must prove misleading.

C. WIENSMA, M. D.

WAHPETON, DAKOTA.

Laxative Powder (P. G.)

In a communication to the April No. of the GAZETTE, Dr. Haviland, in speaking of the treatment of piles by carbolic acid injections, says he keeps the bowels open with (Laxative powder, P. G.) and states, moreover, that the free use of this powder would often render an operation unnecessary. Perhaps a sufficient number of your readers may be equally ignorant with myself, touching the nature of this powder, to justify you in publishing its formula.

JAMES T. PITZER, M. D.

ROCHESTER, Vermont.

[The "laxative powder, P. G.," to which our correspondent refers is, we suppose, the "Pulvis liquiritiæ compositus," of the German Pharmacopœia. This preparation was introduced into the U. S. P. at the last revision, under the name of pulvis glycyrrhizæ compositus, of which the following is the formula:

Senna, (in No. 60 powder)	18 parts.
Glycyrrhiza, (in No. 60 powder)	16 "
Fennel, (in No. 60 powder)	8 "
Washed Sulphur	8 "
Sugar, (in fine powder)	50 "

Rub them together until they are thoroughly mixed.—ED. THER. GAZETTE.]

Remedies for Erysipelas.

In the May number of the GAZETTE is a quotation from the American Druggist, of a list of remedies and the diseases for which they are suggested.

I have used one of them, viz: cold poultice of cranberry, for erysipelas for many years, and shall use it again, if I ever have an opportunity. I would recommend it as a safe and useful application, greatly relieving the burning and smarting pain, and in other respects doing good. But for a remedy to abort the disease, I have used nothing superior to the following:

℞ Acidi carbolici 3 j.
Spts. vini. 3 j.
Ol. terebinth. 3 ij.
Tr. iodinii 3 j.
Glycerini 3 v.
M.

Apply over the parts and beyond with a camel's-hair pencil, every hour or two. A poultice of cranberries may also be used on the parts after the application has dried in.

E. CHENERY, M. D.

BOSTON, MASS.

Meat Poisoning.

In the May No. of the GAZETTE, page 216, is a brief report of a case of meat poisoning, which occurred in my practice. I, at that time, purposely offered no theory of my own in the matter, my object being to get expressions from the profession. I will now state it as my opinion that the hog was diseased—probably affected with a disease akin to ship fever, or typhus, from being crowded too closely in a car or pen, shortly preceding the time he was butchered. In handling these hams, through the salting and curing process, it is very reasonable that they would get separated, and not both be shipped in the same cask. But the question arises, could meat butchered in this condition be cured as well as healthy meat, so as to escape the senses of sight, taste and smell, at the time of using them? I know that such has been the case frequently with fresh meats. I will here state, as I before omitted it, that thorough search was made for some other explanation of this poisoning, but none could be found.

R. L. HINTON, M. D.,

PRESCOTT, Arkansas.

The Therapeutic Gazette

WILLIAM BRODIE, M. D., Editor.

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Summer Complaint in Children.

THE communication from the correspondent in our last issue, on the subject of "Summer Complaint in Children," was very timely, calculated, as it was, to focus the attention of our readers on an ailment which will occupy so much of their time and attention during the heated term. It is to be feared that the misconception of the precise pathological conditions at which our correspondent hints, as embraced under the head of "summer complaint," is more widespread than is commonly conceded. This is, moreover, a subject correct views concerning which are very closely associated with correct treatment, and, *per contra*, in which false conceptions are apt to suggest a line of treatment the effects of which would be directly disastrous. Before attempting, therefore, to indicate therapeutic measures we shall briefly enquire into the nature of the affections (for there are several) which are frequently grouped under the name of "summer complaint"—a very objectionable name, since it affords no clue to the nature of the affection which it is employed to designate.

With some the fact that a child is attacked with a diarrhœa during the heated term, is sufficient to subject it to the routine treatment for "summer complaint," and, doubtless, the promptness with which recovery follows in many of these cases so strengthens them in their faith in the value of the means employed, that when these means fail to relieve, neither the inherent efficacy of the treatment nor the correctness of the diagnosis is for a moment suspected. But while diarrhœa is the prominent symptom of summer complaint, and summer complaint occurs during the summer months, a child may have a profuse diarrhœa during the summer months without being

afflicted with summer complaint—using the term, improper though it be, to designate the only condition to which it should be applied. Looseness of the bowels is natural during the period of dentition, and it is readily aggravated by errors of diet on the part of the child, or, if it have not been weaned, by emotional disturbances, indiscretions of diet, overwork, over-heating, etc., on the part of the mother, these various causes affecting the milk to the extent of its disagreeing with the child. In the infantile diarrhœa thus excited opiates and astringents, after proper evacuation of the offending ingesta, may be promptly beneficial, while in summer complaint, proper, they are useless and often more than useless, being positively harmful.

A bilious diarrhœa, differing from the simple diarrhœa above indicated in the fact that the stools are charged with bile, may directly result from an excessive amount of animal food being ingested, or from over-feeding with any article of diet. In such cases an unusual quantity of bile is secreted, which being carried into the intestines irritates them, and throws them into undue peristaltic action. That this form of diarrhœa should be very apt to occur during the summer months must appear very natural to one who remembers the liability to hepatic congestion, as a result of the diminished respirative action during hot weather.

A third form of diarrhœa to which children are subject, and more particularly, perhaps, during the heated term, is that which is the prominent symptom in congestion of the mucous lining of the intestines, known as entero-colitis or muco-colitis. The form may be attended with considerable elevation of temperature, quickness of pulse and constitutional disturbance. The discharges are at first of a mucous nature, but after continuing for a time become mixed with pus. They are not frequent nor are they excessively copious. They vary as to their color, sometimes being greenish and offensive, like chopped spinach, and again being yellow and mixed with mucus. Exposure to cold and damp, improper food and teething are the more common causes of this form of diarrhœa, and it may follow an attack of measles or whooping cough in a strumous child.

Children are also subject to lienteric diarrhœa during the summer months, the food passing through the entire length of the intestines undigested, and being discharged covered with mucus. The cause of this condition seems to reside in a state of hypersensitiveness of the digestive tract, which does not permit the food to remain for a sufficient time in the various sections thereof, to be acted upon by the peculiar secretions of those parts. Without this preparation it acts as a foreign body and thus excites diarrhœa.

In addition to these forms of diarrhœa in children we have dysenteric diarrhœa and chronic diarrhœa. The former being, however, but an aggravated form of muco-enteritis, and the latter being usually the result of acute attacks, they scarcely demand separate classification.

By "summer complaint" proper is understood a condition, to describe which several terms have been employed. Among them we have, as the most common, cholera infantum, follicular enteritis, and gastro-enteric catarrh. The diarrhœa, in excess of the natural looseness during the period of dentition is usually the initial symptom. In many cases of sudden onset the first indication of the disease is vomiting, although this symptom usually appears after the diarrhœa has continued for several days. In cases of the more gradual development of the disease, which is, perhaps, the more common form, the stools attain the condition of fluidity only after five or six passages, and their odor is unusually offensive. When the watery stools have been thoroughly established, this odor and also the normal odor of the evacuations disappears. The serum of the stools soaks readily into the napkins, leaving the shreds of mucous and greenish matter, and undigested milk, with which it is loaded, lying on the surface. This greenish matter has been the subject of no little study, and various theories have been advanced to account for it. Lehmann and Merklein have shown that when following the exhibition of calomel, which is so often given in this affection, it may consist of the sulphide of mercury formed in the intestines. Golding Bird, however, demonstrated, in cases in which no calomel or other mercurial had been given, that the color was due to the presence of altered blood. The presence of biliary pigment has also been alleged by some to cause the color, but Hartshorne is disposed, from a weighing of the evidence, to attach most importance to the theory of Golding Bird, in such cases, we presume, as have not been treated with mercurials.

The temperature in summer complaint, during the earlier stages, is usually elevated, the head and abdomen feeling particularly hot to the touch. As the disease progresses apyrexia and a positive subnormal temperature may supervene. In very severe and rapidly fatal cases, however, no elevation of temperature whatever has been discoverable. Emaciation commences with the onset of the disease and progresses apace, one or two days being often sufficient to reduce the plump little infant who had been the picture of health, to a pale, flabby condition, with hollow, lack-lustre eyes and hollow cheeks. Prostration is also sudden in its appearance and persistent throughout, the little one being apparently incapable of the slightest exertion. There is usually much restlessness, the infant tossing from side to side while it has strength to do so, and uttering whining cries.

The nervous symptoms in summer complaint are of a serious nature, and, it is to be feared, receive too little attention from the therapeutist, who is wont to direct his remedies more exclusively to the relief of the vomiting and diarrhœa. We do not believe that any treatment which ignores the nervous element in these cases can claim to be successful, and the authors who have written on the subject have, in our opinion, attached too little importance to it; some of them, indeed, do not seem to have recognized the slightest involvement of the nervous system. That the stupor, convulsions and delirium which frequently supervene in severe cases should not have directed more attention to the nervous system, seems almost incredible. It was Marshall Hall who first pointed out the fact that many cerebral symptoms, which up to his time had been referred to inflammation or hyperæmia of the brain, are dependent on anæmia alone. To the group of symptoms having this common cause he gave the name of hydrocephaloid, from their resemblance to the symptoms of true hydrocephalus. He

showed that with children not only repeated losses of blood, but also attacks of cholera infantum, may produce this condition, and suppuration also, but more rarely. But short of these more-developed symptoms we have the nervous irritability, the tossing of the head, and the half-closed eyes during sleep, which are such constant symptoms in severe cases, all pointing to the nervous system as the seat of disturbance. Whether this disturbance of the nervous system is central or reflex, we are not prepared to state. It is probably, however, primarily reflex, the nerves of the gastric and intestinal parietes becoming irritated to a high degree by the action of the fermenting food, thus giving rise, directly, to excessive peristaltic action of the intestines and vomiting. The nervous system of the child is naturally very susceptible to impressions, and is rendered more so by the disturbing and enervating effect of the summer heat. The fact, moreover, that post mortem examinations do not always reveal inflammatory action as having existed in the bowel, might also be adduced in support of the nervous theory of the disease. Huguenin and Bednar lay stress on the fact of the frequent association of brain symptoms, ever purulent meningitis, with cholera infantum, but fail to state whether these symptoms are due to reflex action, or to the effect of septic matter carried directly to the meninges.

The frequent occurrence of cholera infantum in teething children has very naturally led to the supposition of a causative connection between dentition and the disease. It is probable, however, that the only connection of this nature exists in the hyperæsthetic state caused by the irritation of the coming tooth. Unripe fruit is sometimes urged as a cause, but the fact that the disease attacks children who have never tasted such fruit and that the majority, indeed, of those who are attacked have never touched it, disposes of this. The disease is peculiarly one of the city, and the vast majority of those attacked are less than eighteen months of age. While all children of this age are liable to attack, those who are bottle-fed are vastly more liable than those who are reared at the breast. Is there not in these facts the broadest suggestion of the cause? In the country, with its purer air and fresher food, particularly milk, the bottle-fed child is immensely more likely to survive than the child similarly fed in the city. The vitiated atmosphere of the city and the decomposing and fermenting food of the same, carted many miles through the great heat from the source of supply, are, unquestionably, the main factors in the etiology, the depressing influence of the heat and the predisposition caused by detention, placing the child in a condition making it peculiarly susceptible to these causes.

Treatment.—In the case of all forms of diarrhœa occurring in children, the first attention should be given to the diet, but before anything in the way of nutriment is thrown into the stomach and bowels already irritated to undue action, the offending matter should be evacuated. The diarrhœa is itself an effort on the part of nature to rid the system of such matter, and, within proper limits, she should be encouraged in this effort. The limits are reached when the irritating ingesta have been voided and when the diarrhœa is the result of antecedent and not of existing irritation. The judgment of the practitioner is shown in his ability to determine the proper time to encourage and to check the discharge. If any routine treatment is permissible in the diarrhœas of children occurring in the summer season, or during any other season for that matter, a full dose of castor oil with the addition of one drop of laudanum for each year of the child's age, and a little calcined magnesia, may be recommended. Doubtless such treatment followed as a routine might occasionally do no good, or might, indeed, do some harm, but in such cases the fault would generally lie in the physician who did not prescribe it sufficiently early in the attack. The primæ viæ having been relieved of their irritating contents, they should be given the benefit of that rest which is the grand desideratum in the treatment of irritation and inflammation wheresoever occurring. To secure this rest they must be relieved of their function of digestion, by giving them nothing to digest. The child, at the very onset of the disease should be entirely deprived of food. If it be a nursing child, it should be taken from the breast, and if it have been fed on the variety of ingredients, of which the indulgent or ignorant parent so often lets it have its fill, suspension of these must be rigidly enforced. Should there seem to be danger from starvation through an absolute fast, a little oatmeal gruel boiled to a mucilage and thoroughly strained, may be given from a bottle. A little red wine and laudanum may be added to this with profit.

In the matter of diet, the desiderata are adaptation of the food to the physiological demands of the system, and freshness of the articles administered. Science has of late years been placed under tribute for a prepared food which shall supply these physiological demands, and recognizing the great demand for such an article of diet, the cupidity of the dealer has not in all cases been controlled by science. We have, as a result, a great variety of infant foods in the market. Some of these are passably good, many are positively bad, and some are indifferent. Art has not yet been able to furnish a substitute for healthy woman's milk suckled from the breast. When this can be secured let it be given before all other foods. If the mother cannot supply it—such milk as she may be able to give being defective in quantity or quality—let the child be suckled by a healthy wet-nurse. Next to the woman's milk is the milk of the cow. This must, however, be fresh—not the article which has been churned by a railway journey of fifty miles, and then carted through the streets under a broiling sun, to say nothing of the adulterations and sophistications of which city milk is accused. The milk must be from a healthy, properly (not swill) fed cow in the neighborhood. The objection to cow's milk lies in the firm coagulum which it forms in the stomach, thus often overloading the stomach and causing it to reject the undigested mass. Fortunately the more recent introduction of pancreatic extracts enables the physician to overcome this objection. The addition of a teaspoonful of concentrated liquid pancreatin to a pint of milk at 110° F., will transform the casein into peptones in a very short time, thus both relieving the stomach in one of the steps of digestion, and making the milk non-coagulable.

When a proper quantity of milk cannot be secured, it is time enough to cast about for a "prepared food." Without attempting to specify the particular brand of such food to which we would give the preference, we would state that that in which the starch of the flour

is most thoroughly converted into dextrine, is the best adapted among farinaceous preparations. The infantile mouth, even in health, is not adapted to the transformation of starch into dextrine, and to feed the child with starchy food is but to pour into it the very matter, which, fermenting in the primæ viæ, is among the most fruitful causes of cholera infantum.

When practicable, the child attacked with diarrhœa during the summer months, should be removed from its insalubrious surroundings in the city to the fresh air and source of supply of fresh food, in the country. When possible the lakeside or seaside are to be preferred.

In addition to attention to the above hygienic measures, little medication will be necessary in the milder forms of diarrhœa in children. An astringent with a mild opiate or, what is better than either, a few doses of chlor-anodyne, will usually be found sufficient. In summer complaint, however, something more will be required. The best thing to do first is to apply the spice poultice: a tablespoonful each of coarsely powdered ginger, cinnamon, cloves, allspice and corn-meal, quilted into a fold of flannel sufficiently large to cover the abdomen of the child. This is to be saturated with hot whiskey, applied to the surface and covered with a piece of oiled silk. No device will more readily allay gastric irritability, while the effect of the moisture and heat on the bowels is very salutary.

The administration of small doses of calomel—gr. 1-12 to gr. 1-6 to a child eighteen months of age—we regard as good treatment in the commencement. It is not necessary at this time to discuss the question of the action of calomel on the liver, or to consider in what manner it "corrects the secretions." Give calomel in the dose mentioned, and combine with bicarbonate of sodium and, perhaps, also a grain of ginger, every three hours, for a day or two at least. In this connection one would suggest that the antifermentative properties of mercury, which have more recently been extolled, may account for the beneficial action of calomel. Experiments conducted in Hopp-Seyler's laboratory, showed calomel to prevent the formation of those products which result from decomposition of albuminoids in the alimentary tract, and to exercise no influence on normal ferments—as peptones, leucin and tyrosin. May not this antiputrefactive property account for its manifestly beneficial action in a disease induced by putrefaction and fermentation?

The futility of astringents in cholera infantum, except in the stage of convalescence, must have been apparent to every observing practitioner. That treatment is most successful which is dictated by the theory that the disease has its origin in fermentative action taking place in the stomach and bowels. Creasote is a valuable drug in these cases, and when given in combination with subnitrate of bismuth, the effects are gratifying. Several authors on pædiatrics speak highly of bismuth, and, doubtless, there are few of our readers who have not administered it with benefit in these cases. It is a valuable antacid, and as such is beneficial. The addition to each dose of from the sixth to the tenth of a drop of creasote, increases its efficacy, by combining an antiseptic with the antacid.

A few years ago Dr. Alexander Hutchins reported remarkable results in his own private practice, and in the Sea-Side Home for Sick Children, of Brooklyn, N. Y., from the use of calcium salicylate in serous diarrhœa. It was prepared by the admixture, in powder form, of salicylic acid and prepared chalk, as per the following formula:

℞ Acidi salicylici gr. xxij.
Cretæ præparatæ gr. viij.
M
Div. in chart. No. vj *vel* x.

Sig. One every two to four hours.

While this salt is valuable in serous diarrhœa it is adapted to this form only, it being of no value in lientery, inflammatory or dysenteric discharges. It is important that the prepared chalk employed should be pure; that sold in the shops is, usually, a residuum of the manufacture of chlorinated soda. It should be well washed to rid it of the chlorine which attaches to it. The effervescence which occurs in mixing the powder is due to the release of the carbonic acid in the formation of the new salt, and should not alarm the attendant. Our experience in the use of this salt is limited, but as far as it goes it warrants us in commending it for trial.

The use of opium in cholera infantum is becoming more and more a moot question. Without venturing to discuss the question at this time, we would state that opium controls the peristaltic action of the bowels and, in health, checks all secretions save that of the skin. Used circumspectly we do not think it liable to cause the trouble, the dangers of which have led some to taboo it from the list of remedies for cholera infantum. We prefer to administer it in the form of Dover's powder, to which a small dose of camphor may be added. Paregoric is also an excellent form for its administration. Of course the increased susceptibility of children to the action of opium must be borne in mind.

Baths are very grateful and beneficial, when there is pyrexia. The child should be gently immersed in water of a temperature of 95° Fah., which should be slowly cooled by the addition of cold water to 80° or even 70°, should there appear no contra-indications to the reduction.

Stimulants are generally called for, and the following, which is a favorite formula with Lebert, commends itself:

℞ Musk ʒ j.
Carbonate of ammonia ʒ ss.
Water ʒ v.
Alcohol ʒ ij.
Oil of peppermint gtt. v.

M. Thirty drops every hour is the adult dose; for a child two years of age it would, therefore, be five drops.

Small pieces of ice are greatly relished by the infant, and when dipped in brandy before being put in its mouth their value is enhanced.

But, in conjunction with such remedies soever as may be given to the relief of the serous flux, must be given remedies directed to the allaying of the nervous irritability, which may be the cause or the effect, we do not care which, of the flux. The bromide of potassium will always be in order. It should be given in full doses, say two grains for each year of the child's age every two hours, in a teaspoonful of camphor water.

During convalescence from an attack of summer complaint the care in regard to diet must not be relaxed. Indiscretions in this direction have often induced fatal relapses. The peptonized beef extracts

in the market, *e. g.* sarco-peptones, are well adapted to this stage. Among the drugs during this stage there is probably no single one which compares with nux vomica, given in small doses, and its effects carefully watched.

Cremation in its Legal Aspects.

CREMATION is on the increase in this country and in England, and renewed attention is being called to the matter by some recent notable instances where this mode of disposing of the bodies of the dead was adopted in preference to burial. The fact that there is but one crematory in the country, that at Washington, Pa., and the impossibility of sending corpses there conveniently and economically, from other parts of the country, will prevent any extensive use of cremation, even by those who favor it.

The vast majority of the community, however, are still emphatically in favor of burial, and will, no doubt, resist any change on sentimental and religious grounds.

The legal status of the question is somewhat unsettled, but it is doubtful if any action taken in our American courts could prevent any persons from cremating a dead body, who wished to do so, and it was not contrary to the expressed wishes of the deceased. The law books speak of "Christian burial" as a right of every person, but this was declared at a time when cremation was not thought of, and the expression would probably not avail in opposition to an attempt to cremate a body. There have been two cases in England recently, which will be interesting. In one decided about two years ago, a person named H. Crookenden directed his friend Eliza Williams to burn his body, and directed his executors to pay the expenses. The executors, however, buried the body, and Miss Williams obtained permission to disinter it, in order to bury it elsewhere as she said. When it was once in her possession, she proceeded to cremate it, and then sued the executors for her expenses.

In this suit she was beaten, the court holding that the removal of the body, and the burning of it under the circumstances was illegal, having been accomplished by misrepresentations. The judge stated expressly that he would not decide whether burning the body was in itself legal or illegal under the laws of England.

That question has just been presented, however, in a case tried at Cardiff by Justice Stephen, and decided after a careful examination of the whole matter, in favor of the legality of cremation. The circumstances of the case were quite peculiar. A man named Price had a child five months old, which died without the fact of disease being registered as required by law. The coroner then gave him notice that unless the proper certificate was filed by a certain day, an inquest would be held. On the day when this inquest was to be held Price took the body of the child to a field belonging to him, placed it in a cask of petroleum and set the oil on fire. A crowd quickly collected, extinguished the fire by covering it with earth, and Price was arrested. An indictment was subsequently found on the two charges of committing a misdemeanor by cremating the body, and by preventing an inquest. The judge, in determining the case, said that after a full examination of the law it could not be held that cremation in itself was a misdemeanor, as Parliament had never declared it to be such, and that judges without such previous action, would not declare any act to be a misdemeanor which was not at the same time a public nuisance by reason of its annoying or injuring others. The grand jury were directed to inquire into the facts, and see if the act of Price was so public and annoying as to make it a misdemeanor. The grand jury, as has been stated did find an indictment for this reason, but on the subsequent trial the defendant was acquitted. He was also acquitted on the other ground of preventing an inquest, on the ground, probably, although the report does not fully inform the public, that the coroner did not have sufficient grounds for holding an inquest, and consequently any action preventing an inquest, was not illegal. It must be remembered that coroners have not the right to hold inquests at their own will, and they become liable to the law if they interfere with funerals where there are no suspicious circumstances attending the death. The jury, it would seem did not believe that there were any suspicious circumstances connected with the death of the child, and therefore Price did not do wrong in burning the body, this act not being in itself illegal.

The court discussed also the question whether every corpse was entitled to "Christian burial" and said that the acts allowing the use of certain bodies for anatomical purposes, showed that it was not a universal right, aside from the fact that the expression was used without thought of cremation.

Dewberry Root.

WE inserted in a recent number of the THERAPEUTIC GAZETTE (May, 1884), a short article by Dr. Lynch, which first appeared in the Va. Medical Monthly, Jan., 1884, and has since been going the rounds of the medical press, calling attention to the virtues of dewberry root. The numerous inquiries which have come to us from all quarters in relation to this "new remedy," seem at first to discredit the statement of the writer that "this remedy is one which has been known to the profession for hundreds of years;" and yet, making due allowance for a certain extravagance of expression which is a characteristic of our Southern friends, the statement is substantially true.

Dewberry is not only one of the best known of our indigenous astringents, but it holds a secure place among the standard remedies enumerated in the list of the U. S. Pharmacopœia. It is there designated Rubus (blackberry), and defined as "the root of the bark of Rubus villosus, Ait., Rubus canadensis, Lin., and Rubus trivialis, Michx."

Dr. Lynch speaks of dewberry as Rubus procumbens, employing one of the synonyms of R. canadensis, Lin., thus unintentionally misleading those not familiar with the subject. The synonymy of the species of Rubus is not a little perplexing to those even who have made a special study of our flora. Botanists themselves have confounded several species, and described over and over again the same species under different names.

The common blackberry, Rubus villosus, growing throughout the United States and Canada, is so distinct a species that nearly all writers agree in regard

to its name. It has, however, been described as R. fruticosus, Walt., and a well marked variety (var. frondosus, Torr. and Grey) has been made a distinct species, R. frondosus, Torr., R. fruticosus, Bigelow, R. suberectus, Hook, R. inermis, Willd. Another variety (var. humifusus, Torr. and Grey), has received the specific names, R. Enslenii, Tratt, and R. floridus, Tratt.

Rubus canadensis, Lin., low blackberry of the Northern States, the true dewberry, is the R. procumbens of Muhlenberg, R. trivialis of Pursh, Torrey, Bigelow, Hooker, Darlington, not of Michaux, R. flagellaris of Willdenow, R. argutus of Link. Torrey and Grey remark that it is not always easy to distinguish this species from the smoother and prostrate forms of R. villosus. Eaton and Wright describe the species as R. trivialis, Ait., giving as synonyms R procumbens Muhl, and R. flagellaris, Willd.

R. trivialis, Mx., the low bush blackberry of the Southern States (Penn. to Texas) has been confounded by botanists, as well as by others, with the last named species, whose habitat extends from Virginia to Canada and Newfoundland, and a root offered in the market as dewberry is as likely to be derived from this species as from R. canadensis.

R. trivialis bears also the synonyms R. flagellaris, Hook and Arn. (not of Willd.) R. hispidus Willd. Seringe (not of Lin.)

The roots of all of these species are gathered indiscriminately, and sold under the name of blackberry root, and no descriptions have been published which enable one to distinguish the roots of one species from those of another, if, indeed, such a distinction is possible. This is a matter of no importance, however, since the chemical constituents and the therapeutic uses of the different species are practically identical. The fluid extract Rubus U. S. P. may be made either from high bush blackberry, dewberry, low bush blackberry, or from a mixture of two or of all of these; in either case it will prove a most efficient remedy, as set forth in the article of Dr. Lynch, in the treatment of passive diarrhœas.

Death of Dr. Frank A. Ramsey.

OUR readers, who have been entertained and instructed by the pen of Dr. Frank A. Ramsey, of Knoxville, Tenn., will, with us, regret to learn that the hand which held that pen and the brain of whose working it made note, have succumbed to nature's stern decree. Dr. Ramsey was born at Knoxville, Tenn., April 7th, 1821, and died at the same place May 26, 1884. He was graduated from the Transylvania University in March, 1842, when he settled in the place of his birth, but subsequently removed to Memphis, to occupy the chair of materia medica and therapeutics in the Memphis Medical College. On the breaking out of the war of the rebellion he cast his fortunes with those of his native state, and was commissioned medical director in the Confederate army, in which capacity he served during the entire war. On the close of hostilities he returned to Memphis, where he filled the chair of theory and practice in the Memphis Medical College, and edited for a time the Medical Monthly. He had had previous editorial experience, having founded the East Tennessee Medical Record, in 1853. As a writer he possessed qualities which, had he made journalism a profession, would have ensured him distinction. He was vigorous, fearless and ornate in his editorial expressions. He severed his editorial connections in 1868, when he returned to Knoxville, where he continued to reside until his death. Although never writing any systematic work his contributions to periodical literature were numerous.

Dr. Ramsey died of progressive locomotor ataxia, the earlier symptoms of which appeared several years before the fatal termination. The affection was complicated with laryngo-pharyngeal œdema terminating in aphonia and dyspnœa. In spite, however, of his sufferings his pen was not suffered to remain idle, and although his manuscript was at times scarcely decipherable, the subject matter gave evidence of the clearness which characterized the brain until the last. In our present issue appears a posthumous paper read by him before the Knox County Medical Society, and by it ordered to be published.

Dr. Ramsey was a man of rare social qualities, a superior conversationalist and generally beloved. The Knox County Medical Society, which he aided in founding in 1871, met on his death and passed resolutions eulogistic of his memory, from which we quote the following: "We shall miss him as a father out of our little family; miss his kindly presence, his literary influence, his medical inspirations; for with his medical and literary learning and profundity of thought he possessed the gifts of oratorical genius, ever to be remembered by those who knew him in the society."

Menthol Pencils.

MENTHOL pencils are among the therapeutic novelties which have recently come into great favor. It is stated that Europeans who had visited Japan and China were surprised at the readiness with which the natives relieved even severe forms of neuralgic headache (migraine), and the more superficial neuralgias, occurring in all parts of the body, by the external application of a remedy which they called "Po-ho-yo." There appeared, a few years ago, on the market in Paris and Vienna, a liquid under the name of "Gouttes Japonnaise," put up in fantastic packages, with Japanese characters, and sold at a very high price, which was found to be so serviceable in neuralgia cerebralis, and other forms of neuralgia, as to cause an examination into its nature. This examination showed it to be identical with the Japanese "Po-ho-yo," and a further examination of the latter has discovered it to be a product of the Japanese peppermint (*Mentha arvensis*). The discovery thus made, the enterprise of legitimate pharmacy has divested it of the secrecy with which purely trade interests sought to invest it, with a view to the monopoly of its sale at exorbitant prices, and has placed it in the hands of the profession on its merits. The substance is a stearoptene or camphoraceous substance, deposited from the oil and called menthol. Its therapeutic efficacy is, probably, due to its physiological property as a counter-irritant, and as an obtunder of peripheral nerve sensibility. Manufactured into "pencils," or conical pieces, mounted on a wooden base and protected by a cover which is screwed on, it may be conveniently carried

in the pocket, and readily applied over the seat of suffering. Practical experience in its use has convinced us of its great superiority to the ammonia "smelling salts," so much in vogue. We have seen a "pencil" rubbed over the seat of a severe migraine promptly relieve the distressing pain. Its counter-irritant action is not painful but is rather agreeable, being a peculiar combination of refrigerant and irritant action.

Membership in The American Medical Association.

THE American Medical Association, at its late Washington meeting, adopted the following amendment to its regulations, which will have the effect of both increasing its membership and placing it more *en rapport* with the great body of the profession: "Membership in the Association shall be obtainable by any member of a State or County Medical Society recognized by the Association, upon application endorsed by the President and Secretary of said Society; and shall be retained so long as he shall remain in good standing in his local Society, and shall pay his annual dues to the Association."

It has heretofore been necessary, in order to secure membership, to be first elected a delegate to the Association from some society entitled to representation. The regular payment of dues was all that was necessary to continue the permanent membership of the delegate, thereafter. Many desirable physicians who might wish to become members, are averse to the contest which is sometimes necessary, and which is sometimes more spirited than at others, to secure election. Under the new order this is avoided and we expect to see as a result a decided increase in the membership, and more especially so when it is remembered that membership in the Association carries with it a free subscription to the Journal of the Association, a weekly publication, which, in addition to containing the usual attractions of a well-edited journal, publishes all the papers read before the annual meetings of the Association. Address applications for membership, enclosing annual fee ($5), to Dr. Richard J. Dunglison, Lock Box 1274, Philadelphia, Pa.

Oleomargarine in New York.

THE oleomargarine laws passed at the recent session of the New York Legislature, went into effect on June 1st. It provides that hereafter any imitations of butter shall neither be manufactured or sold in the state of New York. The Dairy Associations will probably see that an earnest attempt be made to enforce the law. A commissioner was appointed under its provisions and he will soon have a chance to test the matter, as some of the manufacturers have given notice that they will not obey the law, as they regard it to be unconstitutional.

The Commercial Manufacturing Company, probably the largest concern engaged in the business, have decided to suspend work for the present, at least.

EDITORIAL ABSTRACTS AND ANNOTATIONS.

The Action and Use of Diuretics.

The modus operandi of diuretics is so little understood by the profession at large, that some have disputed the correctness of any classification which places under any distinctive head a number of drugs because of their alleged special action in stimulating the function of the kidneys. Certainly our diuretics, so called, are, in the light of existing knowledge, not a satisfactory class of drugs, and any intelligent study of them must be of unusual interest to the practical physician. We have such a study in an exhaustive article, running through recent numbers of the Practitioner, by its editor, the noted therapeutist, Dr. T. Lauder Brunton. A study of the entire paper, which is largely devoted to the anatomy and physiology of the kidney, and illustrated with cuts, would richly repay the reader, but we can only give a resumé of its more practical parts:

Diuretics, says Dr. Brunton, may act in several ways: (A) on the circulation in the kidney, raising the pressure in the glomeruli, (1) *locally* (*a*) by contracting the efferent vessels, or the arterial twigs which pass directly to the capillary plexus; (*b*) by causing dilatation of the renal arteries, and thus increasing the supply of blood to the kidney. This they may do in more ways than one, for they may either paralyze the vaso-motor nerves of the kidney, or act on vaso-dilating mechanisms. (2) They may raise the blood pressure *generally* by causing the contraction of vessels in other parts of the body. (B) Other diuretics may act on the secreting cells of the tubules, and may increase both the amount of water and the amount of solids excreted by them.

Diuretics have been by some classified as stimulating and sedative; and the sedative class agrees very closely with the one which has been indicated as acting on the kidney through the circulation.

From this declaration of the action of diuretics it is evident that we may hope to do much more by combining them, than by using them singly. Thus digitalis, instead of acting as a diuretic, may completely arrest the renal circulation, and stop the secretion altogether. If, however, we can combine it with something which will produce dilatation of the renal vessels, while the general blood pressure remains high, we shall greatly increase the circulation through the kidney, and obtain the desired result. Experiments in regard to this were made by Grutzner with nitrite of sodium. He found that this substance increased the secretion of urine when the blood pressure was reduced to a minimum by curare; and he found that it also had this effect when the blood pressure was raised by imperfect respiration. When the vaso-motor center was greatly stimulated, however, by allowing the blood to become very venous, the nitrite of sodium no longer produced any increase of secretion.

All nitrites have an action on the blood vessels more or less alike. All of them cause the arterioles to dilate, either by an action on their muscular walls or on the peripheral terminations of vaso-motor nerves. One of the commonest diuretics is spiritus ætheris nitrosi, which contains nitrite of ethyl. Sometimes this is combined with acetate of ammonia as a diaphoretic; sometimes with digitalis, broom, or

spirit of juniper as a diuretic. The action of the skin and of the kidneys are complementary, so that if we increase the secretion from the one we tend to diminish that of the other. At first sight, then, it might appear curious that we should use the same drug to increase the secretion of both. Yet there can be little doubt, from clinical experience, that nitrous ether is useful for both purposes, and the reason of its utility at once becomes evident when we remember that that its action is neither strictly neither diaphoretic nor diuretic, but simply that of dilating the vessels, and consequently allowing the blood to flow freely in whatever direction it may be determined by other conditions. If by combining it with digitalis we can dilate the renal arteries while those of the other parts of the body remain contracted, it is evident that we shall obtain a much freer flow of urine than we could by the administration of digitalis alone.

If instead of a diuretic like digitalis, which acts chiefly through the blood vessels, we combine spirits of nitrous ether with salts of potassium, which act on the secreting structure, it is evident that we are likely to obtain from the increased circulation in the kidneys, caused by the nitrites, a much more plentiful secretion than the potassium salts alone would have produced.

The mode of action of diuretics may perhaps be rendered clearer by the following table. At present the data we possess are insufficient to allow us to classify diuretics with absolute certainty according to their mode of action, yet the accompanying table may be fairly said to represent our present knowledge of the subject, its imperfections being indicated by the number of notes of interrogation which the table contains:

TABLE SHOWING THE PROBABLE MODE OF ACTION OF DIURETICS.

DIURETICS
- Raise arterial pressure...
  - Generally... — Increased action of the heart by alcohol; Contraction of vessels in intestine and throughout the body. — Digitalis, Erythrophleum, Strophanthus, Squill, Convallaria, Strychnia, Cold to surface.
  - Locally in kidney...
    - By action on vaso-motor centres. — The same as in preceding list.
    - Contract efferent vessels or arteria recta so as to raise pressure in glomerulus and lessen absorption in tubules, or both. — By local action on vessels or nervous structures in the kidney itself. — ? Broom, ? Turpentine, ? Juniper, ? Copaiba, ? Cantharides.
    - Dilate afferent vessels. — Paralyse vaso motor nerves or involuntary muscular fibre; Stimulate vaso dilating nerves. — Nitrites, Alcohol, Urea.*
- Act on the secreting nerves or secreting cells of the kidney itself.
  - Increase water excreted — Urea, Caffeine.
  - Increase solids excreted — Liquor potassæ, Potassium acetate, &c.

* When a current of blood is passed artificially through an excised kidney, the stream is much accelerated by the addition of urea. Abeles, *Sitz-Ber. d. k. k. Wiener Akad.* Bd. 87, Abt. 3, April, 1883.

Diuretics may be employed either for the purpose of removing water or solids from the body. They are used:

1st, to remove the excess of fluid met with in the tissues and serous cavities in cases of dropsy.

2d, to hasten the removal of injurious waste products and poisonous substances from the blood.

3d, to dilute the urine.

In cases where the accumulation of fluid depends on venous congestion, as, for example, in cardiac dropsy, those diuretics which act on the general vascular system, like digitalis, strophanthus, squill, or erythrophleum, are most efficient because they tend to remove the cause of the dropsy, as well as to assist the absorption and secretion of the fluid already effused.

When the dropsy depends on the disease of the kidneys or liver, other diuretics should either be given instead of, or along with, digitalis or squill, even in cases of cardiac disease. Where digitalis or squill are not proving efficacious, the addition of a little blue pill greatly assists their action, thought it would be hard to say in what way it does so.

In dropsy depending on kidney disease, decoction of broom, and oil of juniper, and nitrous ether, are amongst the most reliable diuretics, and copaiba in hepatic dropsy.

Diuretics are used to increase the secretion of solids in febrile conditions, and in cases of kidney disease where the excretion of waste products is deficient, and their retention threatens to prove injurious. In such cases, nitrate and bi-tartrate of potassium, turpentine, and juniper, and caffeine, are useful.

Diuretics are also used to increase the proportion of water in the urine, and thus to prevent the solids being deposited from it and forming calculi in the kidney or bladder; or even to dissolve again concretions which have been already formed.

Water is perhaps the most powerful diuretic we possess, although fewer experiments have been made with it upon animals than with the others. The diuretic action of water drunk by a healthy man is very marked, and it appears impossible to explain its elimination by a mere increase in blood-pressure, whether general or local. It has the power of increasing tissue change, and thus multiplying the products of tissue waste which result from it, but it removes those waste products as fast as they are formed, and thus, by giving rise to increased appetite, provides fresh nutriment for the tissues, and thus acts as a true tonic. In persons who are accustomed to take too little water, the product of tissue waste may be formed faster than they are removed, and thus accumulation may give rise to disease. If water be freely drunk by such persons, the product of waste will be removed, and health maintained or restored. Thus many gouty persons are accustomed to take little or no water except in the form of a small cup of tea or coffee daily, besides what they get in the form of wine or beer. In such people a large tumbler of water drunk every morning, and especially with the addition of some nitrate or carbonate of potassium, will prevent a gouty paroxysm. Still more numerous, possibly, is the class of people who rise in the morning feeling weak and languid, more tired, indeed, than when they went to bed. Now, fatigue may be regarded as the imperfect response of muscles and nerves to stimuli, and such an imperfection in their action may be due either to

their imperfect nutrition or to the imperfect removal of the products of their waste. Many such people are well fed, they sleep soundly, and it seems almost impossible to believe that the fatigue which they feel in the morning can result from imperfect nutrition, more especially as one finds that after moving about, the languor appears in a great measure to pass off. This languor probably depends upon imperfect removal of the waste products from the body, as we know that the secretion of urine in healthy persons is generally much less during the night than during the day. A tumbler of water drunk before going to bed, in order to aid the secretion of urine and of the waste products during the night, is beneficial in such cases.

As the amount of urine secreted depends upon the difference in pressure between the blood in the glomeruli and the urine in the tubules, it is evident that any pressure on the tubules, whether caused by obstruction of the ureter by a calculus, by the mechanical pressure of dropsical accumulations in the abdomen, or by distension of the venous plexus in the kidney itself, will tend to lessen the secretion of urine. Consequently we sometimes find that in such cases diuretics fail to act until the pressure has been relieved by paracentesis in cases of dropsy, or the venous congestion lessened by the use of a brisk purgative, or by cupping over the loins.

If the venous congestion is very great, as in cases of mitral disease or of chronic bronchitis with emphysema and dilated heart, bleeding from the arm may be advantageous or even imperatively necessary. In dilated heart and in mitral incompetence the action of digitalis on the heart itself, strengthening its action and enabling it more effectually to pump the blood out of the venous into the arterial system and thus to reduce venous congestion, will aid its action upon the kidneys.

The Oleate of Zinc.

At this particular season, when intertrigo (chafing) is one of the annoyances to which those, particularly in whom there is a redundancy of adipose, are subject, a reference to the therapeutic properties of the zinc oleate is very timely. The subject has been pretty fully covered in an article by Dr. Stelwagen, in a recent number of the Medical and Surgical Reporter, of which Gaillard's Medical Journal gives the following resumé:

Oleate of zinc is a dry, white, pulverulent, impalpable powder of a soapy touch, resembling powdered soapstone; if pure, it should make a clear solution with oils, lard, etc., over a water-bath. It may be used either as a dusting-powder or as an ointment. An ointment of one or two drachms to the ounce of cosmoline, or any fatty base, is most commonly used. Sometimes the oleate made up in ointment form with oleic acid seems to be more efficacious. A very good way of prescribing it is as follows: ℞. Zinci oleatis; acidi oleici, aa ʒ j; petrolati; cerati simplicis, aa ʒ iij. Ft. ugt. To a great extent this oleate replaces the oxide of zinc, and may be ordered whenever that substance is indicated. Acute vesicular eczema may be successfully treated with the application of black-wash and the subsequent application of an ointment of oleate of zinc; the wash is to be applied with a sponge or soft rag for several minutes, two or three times daily; after each application has dried, a small quantity of the ointment is gently rubbed over. In some instances, the disease seems to be more favorably influenced by the oleate employed as a dusting powder. When such is indicated, the following will prove an eligible formula: ℞. Pulv. zinci oleatis; talci veneti, aa ʒ iij; amyli, ʒ ij. M. This is to be dusted over the parts several times daily. The same plan of treatment is frequently of advantage in all weeping eczemas. In intertrigo, a dusting-powder, such as given above, is very comforting. This oleate makes a harmless toilet powder, and combined with talc and calamine, as in the formula below, will make an excellent powder for such purpose: ℞. Calaminæ præparatæ, ʒ ij; talci veneti; zinc oleatis, aa ʒ vij; oleo rosæ, q. s. M. S.—Toilet powder. This last may also be employed as a dusting powder in moist eczema and similar inflammations.

Glycerine in Fevers.

A palatable and promptly beneficial febrifuge is a desideratum, felt more particularly, perhaps, in pædiatrics than in general practice. Children are peculiarly susceptible to disturbing causes and the degree of fever is not always in their case the important indication which it is in the case of the adult. The cause of a very high degree of fever may be, in itself, so insignificant as scarcely to warrant the careful search therefor which would be necessary in undertaking the treatment of a similar elevation of temperature in the adult. It is usually quite justifiable in the fevers of children to address the remedies to the symptoms, unless, indeed, their persistence under such treatment should make a deeper scrutiny for the cause, imperative. But whether the cause be first determined or not the febrifuge employed should be of such a nature as will not depress the vital forces, as some of the more common agents of this class are apt to do. As an effort at supplying an agent of the class required Dr. Mariano Semmola (Allgemeine Medicinische Central Zeitung) recommends the use of glycerine, which he prescribes in the following formula: ℞. Glycerini ℥ i; Acidi citrici (*vel* tartarici) ʒ ss; Aquæ ℥ vi. M. Sig. One or two tablespoonfuls every hour. This is for an adult.

Dr. Semmola has employed this mixture with profit in typhoid fever. In most cases its use was followed by a decrease in the amount of urea excreted, of from ninety to one-hundred and fifty grains.

Rectal Etherization.

Among the more recent novelties is the administration of ether, to induce general anæsthesia, per rectum. The bottle containing the anæsthetic is placed in a bowl of water of a temperature of from 125° to 145° F., and from the mouth of it a tube is run into the rectum. At this temperature the ether is volatilized and conducted through the tube into the intestines. It will thus be seen that the loss of the anæsthetic is reduced to a minimum. On the score of economy, therefore, it would seem to be a desirable improvement. Experience has, however, shown that the objections to this method, which but a superficial consideration of it must suggest *a priori*, are quite tenable. The vapor of the ether introduced into the rectum remains in the intestines, both the

anæsthesia preventing expulsive efforts for its discharge, and its permeating properties carrying it beyond the parts which could be so affected, even by voluntary effort as to expel it. The method has none of the advantages of that by inhalation, while it has a number of disadvantages which do not encumber the former. It is liable to cause diarrhœa which has in some cases proven quite rebellious to treatment. On the whole, etherization by rectum should be reserved for those exceptional cases in which there are difficulties in the way of its accomplishment through the lungs, as, for instance, in operations about the mouth, hare-lip, cleft palate, etc.

Chancres and Old Sores.

The American Medical Journal vouches for the efficiency of the following in the treatment of soft and hard chancres and "old sores": ℞ Salicylic acid, iodoform ää ʒ ss; ext. cannabis indica (solid), gr. x; surgical collodion, ℥ j. M. Collodion will dissolve salicylic acid readily, and iodoform slowly. In using this, shake well and apply with a small brush, immediately to the chancre or sore. It dries immediately, and completely protects the part. This will effectually destroy the specific character of the sore, and a kindly action, healing process, is set up at once. A slight burning sensation is experienced when we make the application, but this is soon followed by a cool, agreeable sensation; and when we examine the part carefully, and come to handle it, we find that a condition of partial anæsthesia exists. The application should be repeated as often as it is thrown off, which will be every two or three days. This is not only a convenient plan of treatment, but it is generally quite successful. Where the ulcers do not heal readily under this treatment, we may omit for a few days and dress with Mayer's ointment.

Bichloride of Mercury in Fœtid Bronchitis.

The value of corrosive sublimate as a germicide and as an agent for the arrest of the putrefactive process, is being the more generally conceded as the substance is being submitted to the test in such affections as are traceable to septic conditions. Dr. Koranyi, an Italian physician, has recently reported excellent results from its use in fœtid bronchitis, after carbolic acid, turpentine, and other antiseptics had been tried without benefit. He administered it in the form of the spray of a solution of 1:10000 (one grain dissolved in 21 ounces of water), using half an ounce of this solution morning and evening. Its effect was to reduce the temperature to the normal at the end of six days, and to remove from the expectoration its fœtor. If further trials shall corroborate this report, this new use of the drug will prove a valuable addition to therapeutics. The danger of mercurial poisoning must, however, not be lost sight of, and its possibility during a course of such treatment must be carefully borne in mind.

Iodoform in Erysipelas.

Dr. C. Clark Burman, of Belfast, England, reports, in the Practitioner for May, his experience in the use of iodoform in the treatment of erysipelas, giving a detailed account of the use of the drug in four cases. His manner of applying it is in the form of a solution in collodion: iodoform, one ounce; collodion, ten ounces. While, in the cases reported, some internal remedies were administered, the prompt results were attributed to the external application. Its prompt relief of the burning pain, which is such a constant symptom of erysipelas, its apparent power of arresting the progress of the disease, and its remarkable freedom from irritation during the period of desquamation following the subsidence of the disease—these, Dr. Burman maintains, are so many strong reasons in favor of its extended use. Its chief disadvantage is its odor, which is, to many, disagreeable. The ingenuity of the pharmacist must be exercised in overcoming this objection.

Book Reviews and Notices.

Female Hygiene and Female Diseases. By J. K. Shirk, M.D., Member of the Lancaster City and County Medical Society.
Lancaster, Pa.: The Lancaster Publishing Co.

It was recently stated by a prominent member of the profession, at a meeting of a medical society in Philadelphia, that "women are dirty beasts anyway." While one's gallantry would prompt him to resent on the spot, this aspersion (literally foul) on the fair sex, his anger properly curbed would be followed by "the sober second thought" which would lead him to view the charge in its medical, or more strictly hygienic sense. Thus viewed, while the language would still remain offensive, the essentiality of the charge, as it applies to the generality of women, (of course there are numerous exceptions), is too literally true. Women are, very generally, very negligent in the hygiene of their sexual apparatus and this negligence following their menses, not only justifies the somewhat inelegant language of the Philadelphia gentleman, but is also the cause of disturbances which hover on the border of disease and often cross over. The little book before us is calculated to correct this and other evils connected with the important functions in the female, by pointing out, in popular language, the necessity of a proper hygiene, the penalties attached to its neglect, and the best means of carrying it out. It is not designed for professional reading, but is such a treatise as the physician might conscientiously recommend to the more intelligent of his patrons.

The Pathology, Diagnosis and Treatment of Diseases of the Rectum and Anus. By Charles B. Kelsey, M.D., Surgeon to St. Paul's Infirmary for Diseases of the Rectum, Consulting Surgeon for Diseases of the Rectum to the Harlem Hospital and Dispensary for Women and Children, etc., with two Chromo-lithographs and nearly 100 Illustrations. 1884.
New York: William Wood & Co., 56 and 58 Lafayette Place.
Detroit: J. McFarlane.

Our readers will remember that when this work appeared as one of the series of standard medical authors, in Wood's library, we took occasion to highly commend it.

The present volume has for its basis that volume. Many changes has been made, but chiefly of a practical character, and which would naturally be suggested to a writer by reason of his increased experience. We have often expressed ourselves in calling the attention of our readers to the fact that we were sorry some works of the series had not an individual existence, so that others, not subscribers, could ob-

tain them. We congratulate the author and publishers, that in this case an exception has been made, and this valuable work can be had separately. Some additions have been made. A chapter on Rectal Hernia has been added entire, and many new illustrations have been introduced.

The aim of the author has been to make the book a safe guide for the student and general practitioner, and to furnish that information which it is so difficult to obtain without special advantages, such as are obtained, by clinics and other special opportunities.

The work is a valuable one and should be in every medical library. It is elegantly printed and illustrated with a full index. Pages 416.

Auscultation, Percussion, and Urinalysis. An Epitome of the Physical Signs of the Diseases of the Heart, Lungs, Liver and Kidneys. Edited by C. Henri Leonard, A. M., M. D., Professor of the Medical and Surgical Diseases of Women, and Clinical Gynæcology, Michigan College of Medicine. Fully illustrated; Cloth, 16mo, 166 pages, post-paid, $1.00.

Detroit, Mich, 1884: The Illustrated Medical Journal Co., Publishers.

An enumeration of the contents of this little book will convey a conception of its nature and scope: Chap. I.—Topography of the Chest, Anterior and Posterior. Chap. II.—The Physical Diagnosis of Diseases of the Respiratory Organs. Chap. III.—Diagnosis by Percussion. Percussion in health and Disease. Chap. IV.—Auscultation of the Chest, in Health and Disease; also of Voice, Cough and different Râles. Chap. V.—On the Sputa, Microscopical and Macroscopical, with a brief Histology of Lung Structure. Chap. VI.—Diseases of the Lungs; their Pathology and Means for Physical Diagnosis. Chap. VII.—On the Pulse; its Rate, Rhythm and Sphygmography. Chap. VIII.—The Heart; its Regional Anatomy, Area of Dullness on Percussion in Health and Disease. Chap. IX.—Auscultation of the Heart; the different Cardiac Murmurs and their Indications of Disease. Chap. X.—Diseases of the Heart; their Pathology and Physical Signs. Chap. XI.—The Liver; its Regional Anatomy, Histology, and Physical Signs of the different Diseases. Chap. XII.—The Spleen; its Regional Anatomy, Histology, and Physical Signs of Disease. Chap. XIII.—The Kidney; its Regional Anatomy, Histology, Pathology, and Symptoms of Different Diseases. Chap. XIV.—Urinalysis, Chemical and Microscopical; prepared especially for this work by Wm. H. Rouse, M. D., Ph. C. Chap. XV.—Bacteria, Bacilli-Micrococci, Vibriones, and Spirillæ; their Growth, Microscopy, and Agents destructive to them.

The chapter devoted to urinalysis comprises over a third of the book, and contains a very full consideration of the subject. It is, therefore, not open to the objection of abbreviation, which is the chief detraction from the other portions of the work.

The Adjudged Cases of Insanity as a Defence to Crime. With Notes. By John D. Lawson, author of "The Law of Expert and Opinion Evidence." "A Concordance of Words, Phrases, and Definitions," "Usages and Customs," "Leading Cases Justified," etc.

St. Louis, F. H. Thomas & Co.

The author of this work, an octavo volume of 953 pages, has adopted as a motto the following quotation from a learned judge's charge: "There is, perhaps, no subject connected with common law upon which the authorities are more hopelessly in conflict, than in this." This is a sentiment which will be heartily endorsed by all who have had any experience in trials at law, of cases in which the mental condition of the perpetrator of a crime is put in as a defense. So "hopelessly in conflict," are both the law and the testimony in an increasing number of cases, that it is beginning to be feared, if, indeed, it is not already positively known, that the ends of justice, and the supreme law, the good of the people, are often defeated. 'Tis true, 'tis pity, and pity 'tis true, but where lies the remedy? Lawyers hold the doctors, whose opinions so clash, responsible, and doctors charge the fault on the laws, the administration of which are "hopelessly in conflict." We shall not attempt the well-nigh hopeless task of pointing out wherein lies the exact defect upon which the correcting finger might be put. Others have assayed this difficult task with indifferent success, and there has been revealed to us no certain way out of the difficulty. Our author, also, has nothing new to offer; he, however, collects all the reported cases in which insanity has been set up in defense of a criminal charge, and have been passed upon by a court of justice in America or Great Britain. Cases which have turned wholly on the topic of insanity have been given in full; if there were other questions involved, then only that part relating to insanity is given.

While the book must, necessarily, be of most interest to the lawyer, it is one which the medical insanity expert cannot study but with profit.

Practical Manual of Obstetrics. Dr. E. Verrier, Lecturer on Obstetrics in the Faculty of Medicine, Paris. Fourth edition, enlarged and revised, with the four "Obstetric Tables" by Prof. Pajot. One hundred and five illustrations. First American edition, with revisions and annotations. By Edward L. Partridge, M. D., Professor of Obstetrics in the New York Post Graduate School, 1884.

New York: William Wood & Co., 56 and 58 Lafayette Place.

This is the April number of Wood's Library of Standard Medical Authors for 1884. A book that has passed through four editions in its own country, cannot but possess some merit. An examination of it proves this truth. It is an intermediate work between the Students' Manual and the elaborate treatise. It is of a practical character and full of suggestions, for such emergencies as may arise in any case of obstetrics. Prof. Pajot, whom our readers know by reputation, says: "There is no spare time for the obstetrician to weigh and consider the best means. A decision must be reached in a few moments, for the case is urgent." Our experience endorses the statement.

To the American reader and practitioner, the instruction of a practical character differs somewhat from American teaching. Nevertheless, this does not detract from its usefulness. The broader the field of knowledge in the department of obstetrics, the more qualified becomes the obstetrician in the case of emergency. Nature ordinarily takes care of herself. It is the departure from nature that calls for skill. The reader of this book will be abundantly rewarded by the information he obtains from it, so practical are its teachings. We are only sorry that it cannot be purchased separately, for every young obstetrician should have a copy—and many older ones would be benefited by it. It is an unexceptionable addition to the library series.

Hooper's Vade Mecum. A Manual of the Principles and Practice of Physic, with an outline of General Pathology, Therapeutics and Hygiene. Tenth edition. Revised by William Augustus Grey, M. B. Cantab., F. R. S., Fellow of the Royal College of Physicians; late Professor of Forensic Medicine and Hygiene, King's College, London; Consulting Physician to King's College Hospital; etc. etc., and John Harley, M. D., Lond., F. L. S., Fellow of the Royal College of Physicians; Honorary Fellow of King's College, and late Physician to the London Fever Hospital; Lecturer on General Anatomy and Physiology at, and Physician to St. Thomas' Hospital. Vol. 1. 1884.
New York: William Wood & Co.
Detroit: J. McFarlane.

This is the May number of Wood's Library of Standard Authors for 1884. As this is only volume one, we will await the issue of the second volume before expressing our views, but instead will give the American Publishers' note: "One of the remarkable books is Hooper's 'Physician's Vade Mecum.' For over fifty years it has enjoyed the confidence and esteem of the profession; revised and improved from time to time, it has always kept its place in the front rank as a reliable and concise treatise on the practice of medicine. The present issue is reprinted from the *tenth* English edition, which is fresh from the press and presents the most advanced and approved views on the subject of which it treats."

The Extra Pharmacopœia of Unofficinal Drugs and Chemical and Pharmaceutical Preparations. By William Martindale, F. C. S., and W. Wyn Wescott, M. D., Lond. 3d edition.
London: H. K. Lewis, 136 Grover Street, W. C.

We took occasion to notice the second edition of this little work in our February issue. Our commendation of it at that time is fully justified by the appearance of the third edition at this early date. The exhaustion of the previous edition, besides being the most emphatic endorsement which the profession could give the book, demonstrates the fact that the practical men, who have to do with disease through direct contact, are not satisfied to confine their choice of the remedies they shall employ to such drugs and preparations thereof, as the committee on the revision of the pharmacopœia may pronounce "officinal." The brand which this committee places on a drug does not enhance its value, and neither is the drug which the builders have rejected, prevented thereby from becoming the head of the corner. Committees on revision of the pharmacopœias have no patent of infallibility, and numerous instances in defense of the statement could be furnished, both in this country and in England.

Some of the Diseases of the Rectum and their Homœopathic and Surgical Trratment. By Mortimer Ayers, M. D. 1884.
Chicago: Duncan Brothers.

We cannot understand what the author, in the title page, means by "Homœopathic treatment of a surgical disease." Does he mean that the knife or ligature should be infinitesimally applied, and then at the 30th dilution? In his preface he talks of "medical and surgical treatment," of what he calles "piles;" this can be comprehended. We are sorry the author has been obliged to confess the inefficacy of Homœopathy in remedies to the cure of "piles," as it places Homœopathic surgery in a very debilitated light. In his course he has fallen back on the orthodox treatment, as practiced by the regular physician. We respectfully refer the author to Dr. Kelsey's work on "Diseases of the Rectum and Anus," just published by Wm. Wood & Co, 56 and 58 Lafayette Place, New York City.

THE AMERICAN TRINITY is the name of a national memorial picture of beautiful artistic design and execution, by Mr. T. G. McPherson, of Beaver Falls, Pa. It gives the portraits of Washington, Lincoln and Garfield, whom it designates respectively, as Liberty's Chieftain, Loyalty's Martyr and America's Ideal. The portraits are good, and combine to make a good picture and to express worthy sentiments.

PAMPHLETS AND TRANSACTIONS.

Remarks on the Mechanical Therapeutics of Amenorrhœa. By J. H. Carstens, M. D., Professor of Obstetrics and Clinical Gynecology, at Detroit Medical College. Reprint from American Journal of Obstetrics, November 1883.

Plaster-of-Paris as a Surgical Dressing. (Illustrated) By H. O. Walker, M. D., Professor of Orthopedic Surgery, Genito-Urinary Diseases, and Clinical Surgery, Detroit Medical College. Reprint from Medical Age, December 10th and 25th, 1883.

Deterioration of the Puritan Stock and its Causes. By John Ellis, M. D., Author of "Avoidable Causes of Disease," etc. etc., New York. Published by the author.

Prospectus of the New Work on Physiology, entitled "Natural Philosophy of the Body, or the Mechanics in Respiration, Circulation, Absorption, etc." By W. H. Triplett, M. D., Member of the Association for the Advancement of Science etc. 1884.
New York: H. A. Vonneidshutz, 69 Pearl Street.

Address on Practical Medicine. By John V. Shoemaker, A. M., M. D., Chairman of the Section of Practice etc. Delivered before the American Medical Association, at the 35th annual meeting, held at Washington, D. C., May 7th, 1884.

The Philosophy of Manipulation in the Reduction of Hip and Shoulder Dislocations, read before the American Surgical Association, 1884. By Moses Gunn, M. D., A. M., LL. D., Professor of Principles and Practice of Surgery and Clinical Surgery, in Rush Medical College, Chicago, Ill. Reprint from Chicago Medical Journal and Examiner, May 1884.
Chicago: A. G. Newell, Printer. 1884.

Transactions of the Medical Society of the State of Tennessee for 1884. Fifty-first annual meeting. Committee of Publication, Drs. Deering J. Roberts, J. A. Atchison, C. S. Briggs, W. W. Taylor, and C. C. Fite; President, Dr. D. D. Saunders; Treasurer, Deering J. Roberts; Secretary, C. C. Fite.

Our old friend, Dr. J. H. Vanaeman, received the societies at his residence, and we know the members had a most satisfactory reception. There could be no exception to the social success of the meeting, and judged from the transactions the scientific was equally satisfactory. The volume is handsomely issued.

Transactions of the Arkansas State Medical Society, at its 9th Annual Session. Dr. J. M. Keller, President, Dr. L. P. Gibson, Secretary.

The minutes show a very profitable meeting. Dr. T. W. Hurley, of Bentonsville, was elected President, Dr. L. P. Gibson, Secretary, and Dr. A. L. Breysacher, Treasurer. The meeting was a large one, and we are pleased to note so many of our friends present, of which we may mention, Drs. Hooper, Linthican, DuVal, Breysacher, Dibrell, Hipolete, and Keller. The minutes are very handsomely printed. We had the pleasure of hearing a portion of Dr. Keller's presidential address, at the meeting of the American Medical Association, at Washington, May last.

The Urine in Disease. Compiled by Louis Lewis, M. D., M. R. C. S., England.

This is issued in the form of a chart, as a supple-

ment to the Medical World, of Philadelphia, and we should judge is not only convenient, but also suggestive, especially so in chemical analysis. The price of the World is one dollar per annum, charts included; worth double the money.

The *American Meteorological Journal* is the title of a new journal which appears on our table. It is devoted to a monthly review of meteorology and allied branches of study. Two numbers have been issued, the first in May. It is edited by Prof. M. W. Harrington, Director of the observatory of Michigan University, Ann Arbor, Mich., and published by W. Burr & Co., Detroit, Mich. This is the first American journal devoted to this subject. Its editor is well-known in scientific circles, and its first number leads off handsomely. Price, per annum $3.00, single copies 25 cents. We predict for it a prosperous future.

The American Journal of Ophthalmology. Vol. I, No. I. Edited by Adolph Alt, M. D., St. Louis, Mo. Terms $2.50 per annum.

The object of this journal is to give American ophthalmologists a medium for communicating the results of their scientific researches and their clinical experiences, to their professional brethren.

Being published monthly, they can do so oftener than in the quarterly journal of the Archives. The editor and publishers hope the profession will give it a liberal support, in which hope we cordially join.

J. H. Chambers & Co., publishers, St. Louis, Mo.

ANNOUNCEMENTS.

Trinity Medical School, Toronto, Winter Session of 1884-5. Winter session begins the first day of October, 1884, and continues for six months.

Fort Wayne College of Medicine. Season 1884-5. Sixth annual announcement; begins September 16th, 1884, and continues five and one half months.

Fourth Annual Report of the Board of Managers of the Burlington County Hospital, at Mount Holly, N. J., with an abstract of cases treated, etc., 1884.

Therapeutic Progress.

On the Physiological Action of Piscidia Erythrina.—About five or six years ago, the medical fraternity in this country began to hear of a wonderful drug, that was said to possess the good qualities of opium, without its deleterious influence. The evidences of its power, from unscientific sources, were sufficient to awaken medical curiosity as to its real character. Messrs. Parke, Davis & Company, of Detroit, imported, in 1879, a quantity of the bark of the root of this tree—the so-called Jamaica dogwood—and prepared therefrom a fluid extract. They kindly sent me several pounds of this, with the request that I should use it in physiological experiments. In order to test its value and mode of action, I made six experiments upon myself, taking on three occasions drop doses, every two minutes, of the fluid extract up to 40 drops, and on the other three trials a half drachm, one and two drachms respectively. These experiments were made in September and October, 1879, I being then in almost perfect health. The report of this proving was published in the November number of the THERAPEUTIC GAZETTE, of that year. In December, 1882, I made a final experiment, taking two drachms of the fluid extract, in divided doses. The following tabulated statement gives the principal phenomena developed:

Time.		Pulse.	Respiration.	Temperature.
7.15 P. M.	Took two minims regularly every two minutes	68	16	98.6°
7.30 "	Feel mentally stimulated, and comprehend easily the subject I am reading	70	16	99.0°
7.45 "	Burning sensation in the whole buccal cavity, especially on the tongue	72	16	99.0°
8.00 "	Comfortable feeling of warmth all over the body; arterial tension markedly increased	74	17	99.2°
8.15 "	Pungent sensation in the stomach, with increased flow of saliva; the sense of warmth has now increased to a feeling such as is experienced after an unusually hearty and stimulating meal	76	18	99.4°
8.30 "	Tickling dryness in the throat; arterial tension, steadily increasing	74	17	99.5°
8.45 "	Flow of thoughts very abundant; am writing an article on Veratrum viride, and find it runs along very easily; pulse is heavy, like the Veratrum pulse	76	17	99.6°
9.00 "	Have now taken two drachms, and will suspend the medicine, as it is beginning to produce dyspnœa	78	18	99.8°
9.15 "	Head feels a little dazed; the eyes are dry and sore and the pupils dilated	82	20	100.0°
9.30 "	Aching pain in the temples, worse on the right side, extending down into the jaw, dyspnœa quite severe, with spasmodic action of the diaphram	84	Irreg.	100.0°
9.45 "	Peculiar itching pain at the occiput (internal); the eyes are glistening, pupils dilated, and vision obscure; submaxillary glands feel sore; salivation continues, and is now accompanied by sweating; breathing labored and spasmodic	88	21	100.3°
10.10 "	Feel so inert and listless that I forget to note symptoms at proper time; dull pain in cardiac region; drowsiness so overpowering as to preclude further noting of symptoms	86	Irreg.	99.3°
	SECOND DAY.			
8.07 A. M.	Slept soundly until this hour, waking with painful priapism; on rising, considerable eructations, with pain in the abdomen; the throat feels parched, but the buccal symptoms have all disappeared; respiration somewhat impeded; arterial tension normal; urination on rising very profuse, clear at first, but depositing, on cooling, a reddish, flocculent sediment	68	19	98.2°
9.00 "	Aching along the spine; head feels best when drawn backward; right shoulder aches as if I had fallen on it; feel somewhat restless, probably on account of pain in the back; the kidneys submaxillary glands, and right ear, all ache; the posterior nares feel excoriated, as if I had taken cold	70	19	98.4°
8.00 P. M.	The above symptoms have continued through the day, with considerable fidgetiness, but all are now gradually subsiding; urine deposits less sediment, but is still profuse; pain has extended down the right arm to hand at intervals during the day	70	16	98.6°
	THIRD DAY.			
2.15 "	Slight aching in the spine, otherwise all conditions normal	68	16	98.6°

The effects produced by these various experimentations may be thus summarized: It is a cerebro-spinal drug, expending its influence mainly, and probably almost entirely, upon the nervous system. It causes, at first, increased activity of the cerebrum. This is shortly followed by a peculiar dazed feeling. The thoughts become confused. It is hard to recollect to take the next dose at the proper time, forgetfulness merging into obliviousness. At this time there is a violent itching pain in the upper portion of the medulla oblongata, with nervous trembling all over. The increase of mental activity was markedly noticeable in each of the experiments. I took the drug usually about four or five hours after dinner, and at a time which I habitually spent at my desk. The immediate effect of the drug was to stimulate me to literary composition, much like a cup of rich *bouillon*, but more positive. Now, alcohol, even in small quantities (say a tablespoonful of brandy and whiskey), always makes me lazy, and indisposed to thought. In about an hour after the beginning of the exhilaration, on an average, the dazed feeling came on. The drug causes burning soreness in the eyes, with lachrymation, accompanied by heat in the internal structure. The eyes look wild and staring, and are in constant movement. There is excoriation in the nares posteriores, with sneezing and coryza. There is, also, aching pain in the temples, and in the right ear, extending down into the right jaw. The eye symptoms precede the forgetfulness in order of time somewhat. The eyes at first were dry, then burning, then lachrymose. The pain in the temples came on later, generally in about two hours, and seemed to be an extension of the pain in the medulla. This symptom recurred at each experiment. It produces a burning sensation in the whole buccal cavity, especially on the tongue and roof of the mouth, with soreness in the submaxillary glands.

The throat was excoriated, dry and tickling, and there were constant eructations of wind, with aching pains in the abdomen. The buccal and pharyngeal symptoms were partially due to the local influence of the drug, but not wholly so. It seems to disturb the mucous surface of the entire digestive tract, if persistently taken. It causes a prickling sensation at the root of the penis, with violent erections. It induces labored breathing, with pain in the sternum, and dull aching pain in the fifth intercostal space; pain in the kidneys and aching in the lumbar nerves; opisthotonos, with aching in the spine. The same aching pain is finally felt in the right arm, and right shoulder and right back, going on to paralysis of the entire right side, including the right half of the head. The dyspnœa recurred at each proving. The effect on the spine was very strongly marked and extremely disagreeable. The feeling, as I now recall it, is fully covered by the word aching.

The excitation of the nervous system was intense, causing a hot flush over the entire body, the pulse increasing ten or fifteen pulsations, with pain in the heart, and restlessness which, however, is quickly succeeded by the obliviousness already mentioned.

Dr. F. M. Moore, of Iowa, reports, in the THERAPEUTIC GAZETTE, giving to a woman suffering with hemicrania, half a teaspoonful of the fluid extract. Spasms supervened in twenty minutes, and continued, with but slight intermissions, for over an hour; but she suffered from difficulty of breathing for about six hours.

Dr. Isaac Ott, of Philadelphia, says: "Experiments on warm-blooded animals demonstrated that Piscidia erythrina first increases the respiration, then produces incoördination, and then dilatation of the pupils, blunted sensibility, narcotism, increase of salivary secretion, and slowness of the heart, and death by asphyxia. In cold-blooded animals it produces bluntness of sensibility, dilatation of the pupil, narcotism, inability to move, followed by a stage of hyperæsthesia and tetanus, which ends in a loss of reflex movement and death. The motor nerves are not paralyzed."

Dr. A. C. Nagle, of Philadelphia, gives the following description of its physiological action upon a rabbit, in the Druggists' Circular, February, 1881:

Time.		Heart-beats.	Respiration.	Temperature.
8.15 P. M.	Pupil dilated	151	76	105°
8.20 "	Fifteen minims given			
8.25 "		154	81	106⅘°
8.30 "	Pupils very much dilated, and salivation produced	159	86	108°
8.35 "	Ten minims given			
8.40 "	Sits sleeping; sensibilities very much obtunded	156	Irreg.	108⅘°
8.45 "		141	91	104°
9.00 "	Fifteen minims given	137	Irreg.	106°
9.05 "	The strongest pinching does not cause him to move	126	73	103°
9.10 "	Labored respiration	121	66	101°
9.15 "	Hind legs are paralyzed; lies sprawling, unable to move	105	43	98
9.20 "		106	36	98
9.25 "		98	16	91
9.30 "		98	9	89
9.45 "	Animation suspended. The dilated pupil suddenly contracts, and death follows. Bowels opened immediately, and heart found beating.			

From these evidences, it is shown that piscidia is a very powerful drug, occupying but a limited field, within which it promises to be of positive value. Piscidia differs from strychnia in possessing more influence on the cerebrum and less on the spinal cord. In strychnia-poisoning the patient retains clearness of intellect to the last, while in that from piscidia he passes early into the stages of obliviousness. Strychnia causes death by the firm clutch it obtains on the pectoralis muscles, suspending respiration. Piscidia, on the other hand, produces death by the violent nervous excitation which it causes. After death by strychnia the heart is contracted and empty. Death caused by piscidia leaves the heart dilated, flaccid and empty. The action of opium and piscidia are similar, but not indentical. The former is much more apt to produce headache, nausea, and other disagreeable symptoms than the latter. In opium-poisoning the eyes are contracted and excited, under piscidia they become dilated and staring. Belladonna affects the system somewhat analogously to piscidia, but the former is much more violent, causing furious delirium, somnambulism, and acute mania, as well as tetanus, like strychnia and brucia. Belladonna antidotes acute poisoning by opium and its preparations. Piscidia, on the other hand, counteracts the evil effects of long-continued use of opium, as in the opium habit. Belladonna causes dryness of the skin, piscidia profuse diaphoresis, both acting through the nervous centers.—George W. Winterburn, Ph. D., M. D. in *Hahnemannian Monthly*, May, 1884.

The Constipation Habit.—The subject of constipation is so extensive, involving the discussion of so many diseases and remedies, and with its diarrhœa of literature covering so much ground, that I forbear, for want of time, if nothing more, from entering into a full consideration of the subject.

That it is often a symptom of a disease, or a disturbance arising from disease, I need not discuss; but I wish, at this time, to call brief attention to it as a disease in and of itself, in order to elicit discussion, and thereby enlarge our ideas.

The constipation habit is certainly a perversion of an important function, and is often productive of great harm and suffering. The normal act of defecation, as a rule, occurs once regularly every twenty-four hours, and with the majority in the early part of the day, before or soon after breakfast. In health

the call to evacuate the bowels is a peculiar sensation that cannot be misunderstood. If not heeded it may soon cease, and the call not return for an indefinite length of time. Immediately preceding this sensation is the peristaltic contraction of the sigmoid flexure, which ejects its contents into the rectum, from which arises the warning and call for voluntary muscular assistance, that is so often unheeded or put off to a more convenient season. But the rectum must be relieved, and if not in the natural way, then antiperistaltic action takes place, and the load is sent back whence it came, a burden and clog, blunting that delicate sense of the bowels.

Women, I think, neglect this function more than men. This is often from a false sense of modesty, their natural delicacy leading them to endure while away from home traveling or in society, rather than to withdraw with eyes upon them to a strange shrine devoted to *cloacina*. Even at their own homes, where there is a lack of modern conveniences, the inclemency of the weather, the exposure to cold, and the foul breath of the privy vault, cause so much dread of the simple act of defecation as to lead them to procrastinate, to the utter demoralization of the normal defecative act. I have no doubt that the trammels of fashionable clothing also interfere to some extent. The considerable straining which is sometimes required to complete the act, may be unattainable from the clothing limiting too much the action of the diaphragm and abdominal muscles.

Sedentary habits which deprive the bowels of the gentle stimulus of exercise, is one cause of constipation; and when to sedentary habits is added position or posture which cramps and crowds the bowels, as is the case with the shoemaker, habitual constipation is almost sure to follow.

The abuse of cathartics is a fruitful cause to induce and confirm this habit. What with the anti-constipation pills, wafers and pellets flooding the land to dredge the *primæ viæ* on the first indication of its filling up, or to be used from the fear that it will fill up, it is a wonder that nature's *cloaca* is maintained at all.

Errors of diet, though not mentioned first, are not least in causing this habit, which is, perhaps, more prevalent in this country than in any other; and some one has said that it is because we eat too little soup. Water, as a solvent and a diluent, acts in the alimentary canal a very important part, and soup-eating should certainly be encouraged in order to counteract the tendency to take our food too solid, and to favor the fæcal current.

Whatever line of diet we are in the habit of taking, and the bowels are normal, if we make a sudden or marked change in our diet, it is often attended by bowel disturbances in one way or the other. I have been in a position to observe a great many persons who have made sudden changes, particularly from a mixed, generous diet to a vegetarian diet, which, from its bulky nature, imposes more work on the bowels than they are used to, often beyond their working capacity, and the result would often be acute constipation. The next step, then, was to use the much-abused water enema, which to the over worked bowels seemed a God-send, but by frequent repetition proved a blight to their work, making them a sluggard in the human economy.

I give one case to illustrate:

Mr. S. had been a vegetarian for five years or more, and had adopted two meals a day. He was in fair general health for one of such habits, but his great difficulty was no natural action of the bowels, which had existed for the last five years. His sole reliance for a movement was the coarse food and water enemata, which he had come to take regularly.

He consulted me ostensibly for hemorrhoids, which he said the doctor, who had treated him, told him he had, and who expected to operate on him. On making a thorough exploration of the rectum, I was not surprised to find no hemorrhoids, for he gave no symptoms of any. I found, however, a very large pouch-shaped rectum, with flabby, relaxed and attenuated walls, which I attributed to the protracted use of the water enemata.

I changed his diet, stopped the enemas, gave him three meals a day, had him drink four or five goblets of water per day, and had him inject on retiring, one third of a cup of cold water to be retained. Ordered daily massage and kneading of the bowels, with a mild faradisation of the same; also ten drops of fld. ext. casc. sag. four times a day. In four weeks' time he had natural stools, without the use of medicine or treatment of any kind.

A too concentrated diet may cause this habit, but I have observed no danger in this direction. A variable appetite which makes extremes in quantity and quality of food, is sometimes a cause, but as this would lead us to discussion not intended at this time, we desist. I have often observed that a long journey by rail will produce a severe constipation, and have wondered if the constant jarring of the cars has anything to do with it.

The more difficult a disease is to treat successfully, the longer the list of remedies employed; and, judging from the length of the list in this case, one would be almost discouraged from attempting a cure.

Yet with clear ideas of causes, the indications for treatment are simple, and with the hearty coöperation of the patient, the physician may feel quite certain of gaining sooner or later the desired result.

The following I give as a general outline of the treatment, which, of course, must be varied somewhat according to the special indications of each case:

Regulate the diet, having three meals per day of palatable, nutritious food, not too bulky or too concentrated. Have soup at, at least, one meal each day.

On rising, at least an hour before breakfast, drink one or two large goblets of water. If stomach is weak and inclined to chronic gastritis, I order the water to be drunk hot: Twenty or thirty minutes following the water, give the bowels a thorough kneading for ten minutes. Then assuming erect position, with arms above the head and left foot on a line with the right and placed in front of it, bend forward till the knuckles of the closed hands touch the floor, then back to the first position, repeating this five or six times; then, reversing the position of the feet, repeat the movements. This is an excellent exercise for the abdominal muscles and an inactive liver.

At night, also, before retiring, drink a goblet of water, and if there are indications of dryness of lower bowels, I use an enema of one-third to one-half cup of water, to be retained.

Flushing the sewer may be a good practice with some, making the stomach the flooding tank; but we must use great care not to interfere with digestion.

When it is available, I often order a fifteen minutes' daily application of electricity to the abdomen, using the Faradic current.

If any medicine is demanded, the first on the list is cascara sagrada. I think it is an excellent "peristaltic persuader." It renders, in my hands, the most efficient service in small and repeated doses.

I impress it upon my patients to make it a daily practice to go to stool at a regular hour, to induce, if possible, by voluntary muscular effort, a movement, remembering that this measure alone, if persisted in, will oftentimes overcome this deplorable habit. Perhaps the best time of the day for this is soon after breakfast. Patient continuation in this line of treatment will do a great deal to dispel this *bete noir* of medical practice.—Dr. W. J. Fairfield, in *Detroit Lancet*, June, 1884.

Recent Progress in Therapeutics and Materia Medica.— *Coca.*— Under the generic title of Erythroxylon, the last edition of the United States Pharmacopœia has officially recognized the Erythroxylon

coca, which is known to have been used for ages by the natives of Peru and Bolivia as a stimulant, and especially to enable them to undergo protracted muscular exertion. The attention of the profession was first called by Wendell, in 1853, to its usefulness as an accessory article of food, as a substitute for tea and coffee, since it produces, like them, effects of a gently stimulating character without possessing nourishing qualities of its own. A number of experimenters and clinical observers have confirmed this opinion and recommended its use in conditions of lowered vitality or extreme fatigue. It is probable that it also exerts some effect upon the kidneys, resulting in an increased flow of urine.

Dr. H. D. Hicks believes that the properties of this drug deserve to be better known to the profession. In a paper (New York Medical Journal, February 23), containing clinical records of three cases, its remarkable effects in relieving the sense of fatigue after extreme muscular exertion, and in sustaining the physical powers under usual demands, and in weak heart, are well demonstrated. Dr. Hicks uses the remedy in his practice in order to prevent and relieve fatigue; to relieve pains in the back accompanied by the discharge of dark-colored urine; in dyspnœa due to weakness of muscles of respiration; for palpitation of heart due to dilatation or weakness of the heart muscle without valvular lesions; mental exhaustion and low spirits; depression of nervous system following sexual excesses, sick-headache, etc. Finally, he claims that it destroys the craving for alcohol, and that its habitual use as a part of the daily diet conduces to mental clearness and activity, freedom from fatigue, and sound sleep. These good effects were obtained from doses of half a drachm of the fluid extract several times daily.

Action of the Opium-alkaloids.—According to some recent researches by Von Schrœder, conducted in Professor Schmiedeberg's laboratory in Strasburg, all the opium-alkaloids hitherto examined resemble opium in acting upon the same part of the body, viz: the central nervous system. This conclusion holds good only for mammals, and must be qualified in regard to the frog, for in it narcotine, codeine, papaverine, and the thebaine have also a paralyzing action on the motor ganglia of the heart. These alkaloids agree with morphine not only in the organ they affect, but in the nature of their action. The symptoms may be divided into two stages; first, narcosis due to a paralytic action on the brain, followed by, second, tetanus due to increased irritability of the spinal cord. This agreement allows these alkaloids to be united with morphine into one group. Notwithstanding this qualitative agreement between the action of these alkaloids on the one hand and that of morphine on the other, there are considerable quantitative differences in the developement and persistence of the narcotic and tetanic stages. The narcosis these alkaloids produce, unlike that of morphine, is not very deep, and quickly passes away; in the case of thebaine, it occurs in the frogs, as well as in mammals. The rapid development of the tetanic stage characterizes the action of this alkaloid. There is not, as in the case of morphine, a progressive paralysis gradually destroying the functions of the different parts of the brain; the action quickly extends over the whole brain, and remains slight while symptoms of irritation have already begun. This fact renders it advisable to break up the group of opium-alkaloids into two sub-groups, the first of which may be called the morphine group, characterized by the prominence of the narcotic stage, while in the other, which may be called the codeine group, the tetanic stage is more prominent, and the narcosis less so. The members of these groups may be arranged as follows, so that each subsequent member has a weaker narcotic, and in the codeine group has, at the same time, a stronger irritant action; in the morphine group, oxydimorphine; in the codeine group papaverine, codeine, narcotine, thebaine. The codeine group contains also hydrocotarnine, laudanosine, and cryptopine; but at present we know too little about them to assign a place in the group to them with certainty. The same may be said of codethyline. The codeine group becomes closely allied by its last members with the strychnine group. The members of the codeine group should not be used therapeutically for their narcotic action. In the codeines produced from morphine by the addition of alcohol radicals such as codethyline, $C_{17}H_{18}NO_2$ (OC_2 H_5), obtained from morphine by the introduction of ethyl, the narcotic action is diminished, whilst the conclusive action is increased in proportion to the number of atoms of hydrogen substituted by alcoholic radicals. In the alkaloids produced from morphine by oxidation (oxydimorphine and oxymorphine), their narcotic action is diminished, without the convulsant action being increased; narceine has no apparent physiological action.

Effects of Arsenic, Mercury and Lead on the Spinal Cord.—Dr. Podow found that in acute poisoning with arsenic, lead and mercury, marked alterations occur in the spinal cord having the character of acute central myelitis. When the poisoning is comparatively slow, these changes are not limited to the gray substance alone, but affect the white substance also, and present the characters of diffuse myelitis. The peripheral nervous system is completely unaltered in rapid poisoning by these substances. The clinical nervous symptoms observed in rapid poisoning—convulsions, paralysis, pain, and anæsthesia—are explained by the alterations just described; but none of these symptoms can be explained by any peripheral nervous affection.

Corrosive Sublimate in the Treatment of Diphtheria.—In the THERAPEUTIC GAZETTE, Dr. F. C. Herr publishes a communication strongly advocating the use of the corrosive chloride of mercury in the treatment of diphtheria. In an epidemic at Harrisburg it was administered to infants in doses of one-twelfth of a grain—every two hours for the first four doses, the interval then being increased to four hours—with excellent results. In one case two grains were given in the aggregate during the course of the treatment without bad effects. The original states that ten grains were given; but Dr. Herr informed us that this was a misprint, and that the amount given was that which we have just stated.*

A New Use for Santonin.—A case under the care of Dr. N. Anderson, (Lancet, November 10), suffering with lumbricoid worms, reported that, as the result of his treatment, he had been relieved of his worms, and also that a long-standing gleet had ceased. The reporter thereupon recommends santonin for gleet, five grains rubbed up with an equal quantity of sugar of milk, to be taken twice a day in milk. It is possible in the case reported, that the effect of santonin upon the gleet was due to a secondary, and not to a direct or primary action; however, there need be no difficulty about finding suitable subjects to try it upon. *Fiat experimentum in corpore vile.—Phila. Med. Times.*

Manaca (Franciscea Uniflora).—It is claimed that manaca is cathartic, diuretic, emmenagogue, anti-syphilitic and anti-rheumatic, or in other words, an especial remedy in rheumatism. It is to its use as a remedy in rheumatism that I wish to the readers of the Kansas Medical Journal. I have been using manaca as a remedy in rheumatism now nearly two years, and must say that it has given more satisfaction than any other remedy I have ever employed in treating chronic rheumatism. One thing in its favor, it is pleasant to the taste, the dose is small, there is very little disagreeable feeling following its use. The greatest thing in its favor is the promptness of its action. If it is going to prove curative in a given

* [A reference to the MS. of Dr. Herr's article shows his chirography, at the point in question, to be somewhat indistinct. Our readers will please note the important correction.
ED. THER. GAZETTE.]

case it will not be many days about it. Writers do not lay down any special indications for its use. Only the general term chronic rheumatism is given as an indication for its employment as a remedy in rheumatic affections. "The term acute rheumatism is unmistakable, but that of chronic rheumatism is vague and prone to lead to error, for it may imply rheumatoid arthritis, articular or muscular rheumatism. Ordinarily this distinction is clearly drawn and essential that the pathological changes may be known and the remedy selected. Unfortunately the reporters on manaca in rheumatism have ignored this distinction."

My opinion is that it is more certain in chronic muscular rheumatism, than either of the other varieties, as it has direct action on the diseased muscles, though I have good results from its use in chronic articular rheumatism. I have used manaca in twelve cases altogether; in ten it was curative, in two it did no good. I will give only three cases as an illustration of its use.

Case one. Mrs. C. has been afflicted with chronic muscular rheumatism for two months, getting worse all the time; not able to do any work, complains of being "stiff and sore all over."

Prescribed F. E. Manaca, ℥ j. Dose gtt. xx, three times a day. In four days "soreness" all gone, patient felt well. One ounce of the F. E. taken. No return of disease is six months.

Case two. Mrs. B., lumbago. She was not able to do any work, hardly able arise from chair.

Prescribed F. E. manaca, ℥ j. Dose gtt. xv. three times a day, increased to gtt. xxx. Patient was able to work in two days. One ounce of the medicine was taken with no return of disease in eight months.

Case three. Mr. A. B., æt. 56. Has had chronic articular aheumatism for two years, gradually getting worse; joints of right hand and fingers enlarged, sore and painful, aching of bones of leg and back.

Prescribed F. E. manaca, ℥ ij. Dose gtt. xx, three times a day. Commenced to improve as soon as he commenced to take the medicine. By the end of the first week he felt well. He took one and a half ounces of the medicine and declared himself well. It is now eight months and no return of the disease.—J. Berger, M. D., in the *Kansas Medical Journal.*

Kola Nut.—A "freighter," who had long been in the services of Queen Victoria, in Zululand, South Africa, gave me to drink of an infusion of a nut called Kola. He said it was used there as we used coffee; he said it was used for debility and to "sober a drunken man" and prevented thirst, etc. My informant's intelligence would enable him to give but little more data. He seemed to think he could not work without the kola nut. Had bought his present supply in England. Although he had a plenty I could only get a small number at any price I could offer. He had seen negroes in Jamaica cured of drunkenness by its use.

Although not a habitual coffee drinker, its effects upon me were about the same, only more exhilarating and powerful. I gave it to a Mr. Papafio (whom you may address here) whom I found very drunk, unable to talk or walk, after the manner of men; in 30 minutes he was apparently sober. It cured and prevented cracking of the hands and feet so prevalent here.

I gave a strong infusion to a railroad-track layer who was suffering from "blue devils" (hypochon.) extremely, and within two hours he felt like going to his hard duties and laughed and talked. No tonic or whisky would do this in such a case.

It is a panacea for despondency. Now, Professor, here is most certainly a material substitute for two of our most esteemed beverages. No one would take a drink of whisky after having chewed a kola nut, since I have taken both kola and whisky and know whereof I speak; nor would one commit suicide after having eaten of it. Space will not permit of my saying why. I could discover no deleterious effects. Who knows but that it will interpose a barrier between mankind and the great foe, Bacchus.

It seems a tax upon your credulity to believe that this nut can possess all these rare virtues attributed to it. It should certainly be put to the most satisfactory test. Ah, doctor, if we have in this remarkable product something at once which combines the wonderful properties of coffee (caffein) cocoa and coca, makes the sad heart gay and cheers without inebriety, enables one to smile at hunger and fatigue and above all beards alcohol and checks a craving which seems indomitable, then a panacea for a large number human miseries and a fore-taste of a golden age (millenium?) are combined within a nut shell. —J. M. Barrickman, M. D., in *Physio-Medical Journal.*

Menthol.—In the Journal of April 19th, page 775, there appears a notice of an article by M. Genois in the Polyclinic on the subject of this drug, of which I am pleased to observe it said that it will, in a short time, "take its place as a regular remedial agent."

Having been the first (I was then a student) to point out the antiseptic and "antineuralgic" properties of menthol, and some misconceptions having arisen regarding this, I wish to reassert my right to the credit of its introduction, and to state in a few words what my experience of it has been in the course of the past five years. The first results of my investigations were stated in a note in the Lancet of June 17th, 1879, wherein I was named Archibald "Duncan"—an error which was corrected the following week. Later, in the beginning of 1880, I laid my views at some length before the Edinburgh Medico-Chirurgical Society, and the paper was published in the Edinburgh Medical Journal for August of that year. The affections there alluded to as being successfully dealt with, are facial neuralgia, sciatica, and toothache; and the antiseptic properties of the drug are experimentally demonstrated.

I think it was Mr. Malcolm Morris who, some time ago, spoke of its antiseptic use in ringworm of the scalp. I applied a solution in rectified spirit to the tinea tonsurans of a young friend in the winter of 1879, and cure resulted; and recently I have met with success in this disease from a pomade of menthol, iodoform and vaseline.

In facial neuralgia, in some forms of sciatica, in neuralgic headache (clavus), and in toothache—the most recent instance being in a severe case of a lady recovering from acute alcoholism—I have repeatedly found relief follow within a few minutes of its application. The cones or sticks are useful for external application. Frequently, however, I use now the following formula: Menthol, 30 grains; spirit of rosemary and rectified spirit, each two drachms; or compound spirit of lavender may be used instead of the rosemary for application to the cavity of a carious tooth. I have only taken it once internally myself, but never have prescribed it. This has, however, been done.

I am glad to find that more and more human suffering is being relieved by a wider appreciation of a very useful drug.—Dr. Archibald D. Macdonald, in *The British Medical Journal*, May 17, 1884.

Use of Pilocarpine in Pleurisy and Peritonitis.—An experience of several years induces Dr. Dominicis to believe that great benefit may be obtained, not only in pleurisy and pleuro-pneumonia, but also in peritonitis, from the use of pilocarpine, rapid reabsorption of the exudation, even when copious, taking place. The author gives shortly the history of some of his cases of both chronic and acute peritonitis, in whioh the administration of jaborandi or of pilocarpine (by hypodermic injection) was followed by rapid recovery. When the effect

was not obtained, it was due to some special complication of the disease. In the course of these experiments in treatment, the author made careful observations on the mode of action of the drug, from which he arrives at the following conclusions: 1. The systolic force of the heart, except during the stage of sweating, is increased rather than lessened, unless the nutrition of the myocardium is interfered with. 2. The effects on the sudoriparous glands endure after the repeated administration of the drug. 3. Caffeine and quinine moderate the action of pilocarpine.—*Medical Record*, May 31, 1884.

A Caution About Jequirity.—After reporting a case of sloughing of the cornea after the use of jequirity, in the Weekly Medical Review, February 23, 1884, Dr. S. Pollak formulates as follows:

1. Jequirity is by far the best remedy which has been hitherto used for trachoma and pannus.

2. It does all, and more speedily, that has ever been claimed for purulent inoculation, minus the repulsiveness of the last remedy.

3. The infusion of jequirity must be used only when perfectly fresh. After four or five days it swarms with bacteria, when the danger of their entering the tissue and causing a septic state is very great.

4. Sterilizing the infusion requires much care and labor, and may not always be practicable. It will doubtless retard the decomposition, but it will not prevent it entirely.

5. The full therapeutic utility of jequirity will only be attained when chemistry shall have succeeded in preparing an alkaloid of it, which will keep, and the strength of it is properly known.—*Medical and Surgical Reporter*, March 22, 1884.

Elenine as a Remedy for Coughs.—Dr. Valenzuola has recently met with considerable success in the treatment of troublesome coughs by elenine given in pill form or in tincture (El Siglo Medico). He employed it in bronchitis and phthisis in doses of one-eighth grain in pill ten times a day, or five drops of the tincture three times a day. In every case he states that the cough was moderated, the expectoration was lessened in quantity and became mucous, and the thoracic pains were greatly mitigated. The drug also increases the appetite and improves digestion. It is possessed of no narcotic properties. Elenine is not a new remedy, for it was known, though but little esteemed, by our fathers. Further trials with this drug will have to be made before the indications for its use shall be sufficiently clear and definite to establish its claims as a reliable remedy for coughs.—*Med. Record*, May 31, 1884.

Preparation of Infusion of Jequirity.—A writer in the Medical Herald suggests the following as the best method of preparing an infusion of jequirity (Abrus precatorius): Take eight beans and crush them with forceps or flat-jawed pliers, place them in a mortar and bruise the fragments into a pulp; then add one ounce of warm water and set aside for twenty-four hours, after which rub thoroughly in the mortar and filter, when the infusion is ready for use. It may be instilled every four hours into eyes affected with pain, or brushed every day over the hypertrophied papillæ of the lids. It is stated it has been objected by some that jequirity can not safely be used in cases of superficial ulceration of the cornea. Experience has shown this to be groundless. This remedy is gaining ground daily, and it will soon form a necessary part of a druggist's stock.—*Weekly Drug News*, February 23, 1884.

On the Use of Iridin in the Treatment of the Sickness of Early Pregnancy.—Dr. D. Barry Hart (Edinburgh Clinical Journal) recommends highly the following:

℞ Iridin, gr. ij.
Cons. ros., q. s.
Fiant pilulæ, no. iij.

Sig. One at night.

This must be followed in the morning by a draught of Friedrichshall water, a teaspoonful of the Carlsbad salts, or a doubly strong Seidlitz powder. Dr. Hart claims simply to apply the known views of Rutherford concerning the action of iridin upon the liver, as inducing a flow of bile, to a condition, pregnancy, that exerts an influence upon the liver, and in this way probably induces vomiting.—*Journal of the American Medical Association*, April 12, 1884.

The Treatment of Diphtheria by Blue Gum Steam.—Dr. Murray Gibbes reports thirty-seven cases of diphtheria claimed to have been cured by saturating the atmosphere of the room in which the patient was placed with the vapor of the eucalyptus globulus. The atmosphere must be constantly loaded with steam, and the vapor of the eucalyptus is obtained by pouring boiling water on the dried leaves. To assist nature in throwing off the membrane, Dr. Gibbes uses a solution of steel and glycerine, with which he brushes the throat when the membrane is loose enough to come away easily. Dr. Mosler, in 1879, spoke strongly of the value of eucalyptus inhalations in severe cases of diphtheria.—*London Medical Record*.

Pharmacy *vs.* The Average Physician.—A writer in the American Drug News says that he was recently requested by a physician to prepare an elixir of bismuth, pepsin and pancreatine with acids. Knowing the impossibility of making any such combination he notified the doctor that the prescription could not be made into a solution for chemical reasons stated. The doctor said that he still wanted the prescription made up in this manner, as a like combination had been obtained from some manufacturer, and used with good results, and that a similar article was wanted. Such is the pharmaceutical knowledge of the average physician.—*Detroit Lancet*, June, 1884.

Test for Syphilis.—Dr. H. C. Wood says that if he finds ten grains of potassium produces symptoms of iodism, he is quite sure that the case is not one of specific disease. If the patient takes from one half to one drachm of the iodide of potassium and thrives thereon, he is sure he is the subject of specific disease. Hence iodide of potassium is the diagnostic test for obscure syphilis.—*Detroit Lancet*, June, 1884.

Antiseptic Vaginal Injections.—Dr. Fordyce Barker says that for two years he has directed his nurses never to give a vaginal injection unless specially ordered, in the puerperal state. Experience has taught him that patients did better than when antiseptic vaginal injections were used in a routine manner.—*Detroit Lancet*, June, 1884.

Picric Acid Test for Albumen.—Prof. M'Call Anderson says he regards the picric acid test for albumen in the urine, as the most beautiful and delicate of all tests. Dr. Roberts regards heat and nitric acid as the most delicate and reliable.—*Detroit Lancet*, June, 1884.